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E S S A Y

ON

THE NATURAL ADVANTAGES

OF

IRELAND,

THE MANUFACTURES TO WHICH

THEY ARE ADAPTED

AND

THE BEST MEANS OF IMPROVING

THOSE MANUFACTURES.



THE LOT IS FALLEN UNTO ME IN A FAIR LAND.

BY WILLIAM PRESTON, ESQ.

Presented to the R. I. Academy, September the 29th, 1796.

TO THE READER.



THE Essay, which is contained in the following pages, was originally presented to the Royal Irish Academy, some years ago, as a prize Essay, and honoured by that Body with the proposed reward. It might have appeared earlier in the Transactions of the learned Society, before whom it was read; but on account of its extraordinary length, some objections at first arose to its admission; as it might occupy too great a proportion of their volume; the author was unwilling to press its publication, while it might operate to the exclusion of any other essay of merit. By the change in the form of the pages of the present volume, the printer is enabled to comprise nearly a double quantity of matter, in the same number of sheets. By this means some spare room has been gained,

and the author was emboldened to ask a place for a production on an interesting subject, and which he had the vanity to hope might be of some little use to the public.

The reader will have the goodness to recollect, that full six years have elapsed since the present essay was written. Some most important events have occurred since that time, in every part of Europe, and particularly in Ireland, which have materially affected, and essentially changed both the intrinsic and relative state of the country, hence, some of the positions laid down by me, may not appear so strictly just, some of the topics discussed not altogether so apposite as they would have done, had they been offered to the public, before the great and stupendous events, to which I allude, took place. It will readily be seen how much the political changes in Europe, will bear on commercial questions.

The author frankly confesses, that the prospect of his deriving any credit from the following speculations, is very much diminished by the delay of this publication.

Percant, qui ante nos nostra dixere !

is the pathetic exclamation of a writer. Many of the observations

servations in the following tract, which may now appear trite, would probably have had something of novelty to recommend them; had they appeared six or seven years ago. This, the writer hopes, will plead his excuse with the candid public, should some of the observations in the following tract appear to be common place and unseasonable.

TABLE

TABLE OF CONTENTS.



BOOK I.

On the natural Advantages of Ireland, the Manufactures to which they are adapted ; and the relative merit of Manufactures.

CHAP. I.

On the natural Advantages of Ireland.

- SECTION 1. *Natural Advantages of a Country in general.*
2. *Natural Advantages of Ireland in particular.*
 3. *Of certain Disadvantages under which Ireland labours.*
 4. *The general sketch of Manufactures to which the natural Advantages of Ireland might be supposed to lead her Inhabitants.*

CHAP. II.

General Observations on the preference of one Manufacture to another.

- SECTION 1. *A limited Capital should not embrace too many Objects at once.*

SECTION

- SECTION 2. *Manufactures considered on the ground of intrinsic Excellence and Value.*
3. *Manufactures still further examined, on the ground of intrinsic Excellence and Value.*
4. *Manufactures considered with regard to the Political Circumstances, the domestic Habits, and Foreign Relations of a country.*
5. *Comparison of Manufactures with regard to the peculiar circumstances of a country, continued.*

CHAP. III.

Certain Manufactures considered in Detail, with a Reference to the natural and political Situation of Ireland.

- SECTION 1. *Of the Linen Manufacture.*
2. *Of the Woollen Manufacture.*
3. *Of the Cotton Manufacture.*
4. *The Three preceding great Manufactures compared.*
5. *Of the Silk Manufacture.*
6. *Of Hardware, and other Manufactures, where Fire is the principal Agent.*
7. *Miscellaneous Observations on some other Manufactures.*

BOOK II.

CHAP. I.

On the Encouragement and Extension of Manufactures in Ireland.

INTRODUCTION.

CHAP.

CHAP I.

Of general Methods of promoting Industry and Arts, of unequivocal Utility and certainty in their Operation.

- SECTION 1. *Application of Philosophy and Science to Manufacture.*
 2. *The abundance of Provisions and Agriculture.*
 3. *Of Frugality, with a glance at the Prodigality of Ireland.*
 4. *Subject of the Prodigality of Ireland, continued.*
 5. *Of the removal of Manufactures from the Capital.*
 6. *Of Morals, and Public Instruction.*
 7. *The subject of Morals and Public Instruction continued.*
 8. *Of Regulation and Controul.*
 9. *Of Charitable Loans.*

CHAP. II.

Schemes for the Encouragement of Industry, and advancement of Manufactures whose Utility is questionable.

- SECTION 1. *On Bounties.*
 2. *On protecting Duties.*
 3. *On Establishments, for the prosecution of Trade and Manufactures by Government, or the Public on its own Account.*
 4. *On Corporations.*
 5. *On the Maximum in the Price of Labour.*
 6. *On Foundations.*

CHAP. III.

Brief Notices respecting the Encouragement of Specific Manufactures.

- SECTION
1. *The Linen and Hempen Manufacture.*
 2. *Of the Woollen Manufacture.*
 3. *Of the Cotton Manufacture.*
 4. *Of the Paper Manufacture.*
 5. *On the providing of Food for the Manufacturer.*
 6. *Miscellaneous Observations and Conclusion.*

INTRODUCTION.



EVERY attempt to ameliorate the condition of the labouring poor, is laudable at all times, but is peculiarly seasonable at a juncture, when it must be confessed, great discontents prevail, among the lower classes of the people ; and although the general prosperity of the country may be progressive, many and galling grievances subsist, much severe and encreasing misery is felt in many quarters, and discontent and famine too frequently pervade the habitation of the peasant and the manufacturer.

Whence the murmurs and dissatisfaction of all the labouring poor, and the local misery of too many among them proceed, it is not the business of the present essay to enquire.

Various concurring causes have given some severe stabs, to the manufactures of this country ; and it will require every art of healing, to

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cure the wounds they have made. The scars it is to be feared will long remain.

Non tamen omne malum miseris, nec funditus omnes,
Corporeæ excedunt pestes: penitusque necesse est,
Multa diu concreta modis inolescere miris.

Yet, we should not despair of the republic, or yield to a supercilious despondency, which treats with contempt, as wild and chimerical, every scheme of reformation and improvement. Ireland includes in herself the means of great prosperity. By an uncommon innate force, and vigour, she has survived the deadly wounds aimed at her noble parts; and the consuming maladies, that preyed on her vitals. She now requires only wholesome regimen to establish her in perfect health. She requires only, to have her energies awakened, by proper motives; to have a just direction impressed on her industry, by a salutary mixture of encouragement and restraint.

While the population of England is decreasing, (which, it appears, from calculations founded on the returns of the collectors of the window-tax, and other documents, to have rapidly done, since the end of the last, or the beginning of this century;) the population of this country, on a retrospect through the same period, appears to have increased, in a surprising proportion. The late Mr. *Bushe* has investigated the subject of the population of Ireland, as it stood in the year 1788, by calculations founded on the returns of houses, made by the collectors of hearth-money, and finds the amount for that date to be considerably

rably more than four millions. Sir *William Petty*, from similar data and computations, makes the population of Ireland, in the year 1672, no more than one million one hundred thousand; thus has the population of this country been more than trebled, in a period of one hundred and sixteen years.

A benevolent and patriotic mind must contemplate this subject with pleasure. The consideration of it affords powerful incentives, to stimulate those, who possess talents, to suggest, or means, and activity to forward plans of national improvement. It shows, how much may be done, with a moderate degree of attention to the agriculture and manufactures of *Ireland*. These fair appearances, if duly weighed, ought to induce the legislature in its collective capacity, and powerful or wealthy individuals, each, within the sphere of his own influence, to exert themselves, for the improvement of a country, which displays such promising capabilities.

It is plain, that *Ireland* is far from being fully cultivated, or peopled, at present. A vast number of commons are unenclosed, a prodigious quantity of reclaimable moor, and mountain lies useless and unprofitable. Were our waste lands reclaimed and ameliorated; were manufactures, suited to the means, the natural situation, and political relations of the country, generally diffused; it is not easy to define the extent of population and prosperity to which the country might attain.

Whatever *Ireland* has done, was accomplished by her, under a variety of disadvantages, oppressions, and calamities partly accidental, partly induced

induced by the mistaken and cruel policy of *England*. Her progress has been that of a generous and spirited courser carrying weight nearly beyond his strength. Not to speak of the events of the preceding century, civil wars, pestilence, and famine ;—a mistaken policy annihilating foreign trade, and domestic manufacture, a burthenfome and expensive establishment, and a profuse government, with their inseparable concomitants heavy taxes, a constant drain of the wealth of the land, and a systematic oppression of its peasantry by the iron hands of an immense body of absentees, conspired to plunge *Ireland* in an abyss, from which it seemed scarce possible that a nation should emerge.

This country, at no very distant period, was dependent, for a supply of corn, on *England* and *America* ; at this, on the contrary, she exports large quantities of grain, and some bread and starch. Were landlords duly attentive, to the encouragement of resident and improving tenants, were an end put to the destructive practice of land-jobbing, and parliamentary assistance given, to the reclaiming of waste and barren land ; this country would surpass most others in cultivation. In the year 1778, when Young wrote, he states that *Ireland* was more cultivated than *England*, having less waste land, in proportion to the size of the two countries. Since that time, a variety of causes, particularly the salutary operation of the code of corn laws, have contributed to improve the face of the soil ; and, I believe, it may be stated, that without any exaggeration, the tillage of Ireland has been doubled within the last thirty years. Much of the praise of this may be ascribed to the industry of the people, which, whatever may be said to the contrary

contrary, wants only moderate encouragement, to draw from it the most active and laudable exertions.

It is a favourable omen for the advancement of manufactures, that the cultivation of the soil has made such progress in this country. The agricultural and commercial systems ought to go hand in hand. Sir *William Temple* imputes the want of trade in *Ireland* to the want of people; the increase of agriculture, while it multiplies the inhabitants of a country, becomes one of the most effectual means of establishing manufactures on a permanent base, by procuring for the workmen a cheap and plentiful supply of provisions. “The laws and customs,” says Dr. Smith, “so favourable to yeomanry, have perhaps contributed more to the grandeur of *England*, than all the boasted regulations of commerce taken together. What has brought the American colonies, (adds he) to their present state of prosperity, but agriculture?”

The foregoing observations are more nearly connected with the subject of manufactures, than, at first sight, may appear. It is impossible to separate the different provinces and exertions of industry; they must concur, in a regular and well organized whole; in a systematical and harmonious co-operations, to produce national prosperity. To excite a partial, a limited, or local exertion, in some particular department of industry, or branch of manufacture, without attending to this integrity of plan, must prove a futile, or even a pernicious attempt. If there is not a general disposition to labour, a sober and permanent spirit of industry diffused over the country, maintained and assisted by frugality
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and habits of sobriety, all the fits and starts of exertion, in favourite branches of manufacture, according to the caprice of speculation, and giddy theories of the moment, will fade, “like the baseless fabric of a vision, nor leave a wreck behind.” It was a saying of one of the emperors of China, “that, if any man was idle, in his dominions, some “one must go worse clothed, and worse fed;” the emperor was in the right, for though the idleness of one man does not directly tear the coat off the back of another; the sum total of the consuming or accumulating powers must be diminished in the same ratio.

If much yet remains to be done in the country, we may enter with confidence, on the task of improvement; since we know, that the evils which we must encounter and subdue, are not natural and inherent, but accidental and adventitious. The native qualities of the soil and its inhabitants are truly excellent; remove the obstacles that prevent their full effect and the work is done. Could we attribute the backward state of *Ireland* in many particulars, to the situation, soil, or climate of the land, or the national character of the people, the case would be desperate; but when we refer our backwardness or deficiency to obvious causes, removable without difficulty, by the hands of wisdom and patriotism, the prospect of our past and present evils becomes a lesson of encouragement and exertion.

It is observable, that the *Irish*, in every country but their own, advance with equal firmness and address, and distinguish themselves, in arts, in commerce, in war and letters; while the meagre encouragement

ment allowed to native merit drives them from the unnatural bosom of the parent soil. In fact it appears, that when due encouragement is given to the exertions of the *Irish*, neither genius nor industry are wanting. An excellent judge, Count *Rumford*, has declared that he found no artists more intelligent than those of *Ireland*; how criminal then is the cant of some people, who affect to decry every thing that is the production of this country?

To procure information concerning the state of the labouring poor, to suggest the means of ameliorating their condition, of augmenting the stock of national industry, and with it the stock of national virtue and comfort—to promote these is so great and so good a work, that he, who but applies a hand, to move them forward, however feeble his effort, and inconsiderable his strength, may flatter himself that he has done once in his life a praise-worthy act. All disquisitions on statistical subjects, though in themselves they may not be profound, ingenious, or fraught with novelty, answer a profitable end. They are to the public, what habits of self-examination are to the individual, they turn the political, like the mental eye inward, they rouse from the trance of apathy, they impress a knowledge of secret faults and weaknesses, and frequently suggest the means of reformation. What pleasure can be greater, to the benevolent mind, than the consciousness of having co-operated in plans for the happiness of myriads? Whether such plans succeed or fail, their authors and promoters must find a solid reward in their own feelings,

Inventas qui vitam excoluere per artes,
 Quique fui memores alios fecere merendo.

I shall conclude with observing, that systems are of small utility in politics, they deal too much in generals; they suppose an impossibility; they proceed, as if the state and all its establishments, were in a kind of fusion, fitted to be new cast, and moulded by the speculator. Systems gratify the vanity of those who wish to think themselves wise, without the trouble of much meditation, or any research beyond a bookseller's shop. They fill the heads of men, with general asseverations and abstract principles, without examining the data on which they are supposed to be founded, or proving their practical application to purposes of utility. Men, by retailing the reveries of *Young*, for instance, may appear to the ignorant, (and there are learned, as well as vulgar ignorants) able theorists on agricultural subjects; and may raise a credit for skill in political economy, by drawing largely from *Smith's* Wealth of Nations.

It would have been easy to have swelled those pages with columns of figures, from the custom-house returns and public accounts. Such things would have only cost the writer the trouble of transcribing them. They give an imposing aspect of research and knowledge to a book, but too frequently they fail of presenting any useful information to the reader. It is ever the spirit of minute detail to grasp at the shadow and miss the substance; one good sound philosophical principle, is worth a thousand tables of figures. Besides, it is well known to persons who are conversant in the subject, that custom-house returns
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of export or import, which are formed upon the merchants entries, are frequently fallacious ; because the entries from which they are compiled, do not actually give a true representation of the real amount of export and import, for, as it is well known, merchants are in the habit of making their entries larger than the truth.

I have carefully endeavoured to avoid those pernicious paradoxes, which are too frequent in the hasty productions of modern writers, and which proceed from the rage for advancing something new. This rage has its source in vanity, a mistaken vanity, for novelty is not always the character of superior knowledge, nor is bold assertion always talent. Many positions have been neglected for their absurdity, by the good sense of times past, and reserved, to give the writers of the present hour, who are not ashamed to hazard any thing, the praise of novelty. Thus, for instance, I have known it to be asserted, by a writer on economics, that agriculture may be too much pursued ; that a country may be too highly cultivated.

ESSAY on the natural *Advantages* of IRELAND, the MANUFACTURES to which they are adapted, and the best means of improving those MANUFACTURES.



B O O K I.

C H A P. I. *Section 1.*

THE natural advantages of every country may be considered,—with respect to the internal comfort, easy subsistence, and opulence, the health and longevity of the inhabitants, and the consequent encrease of population;—or with regard to foreign relations, to the extension of trade and commerce, and enjoyment of peace and security.

Under the first head are comprehended a mild and salubrious climate, a fertile soil, capable of nourishing, in abundance, all the useful domestic animals, and productive of all the articles of the first necessity,—a copious supply of valuable minerals, or of those natural productions, which either in a crude state, or with more or less preparation, are useful, in home consumption, furnish a profitable export, or become the *prima* of manufactures.—An extent of coast, and seas well supplied with fish, are a source of plenty and opulence to a country, by feeding the inhabitants, and furnishing them, in the surplus, over what they can consume, with a valuable object of export, unfailing and independent of caprice and fashion. Add to these a number of streams and rivers, intersecting and watering the face of the country;—these irrigate

irrigate and fertilize the soil,—they facilitate the communication of the inhabitants, with each other, the transportation of heavy and bulky commodities, from place to place ; and become the means of carrying on various manufactures, to which a free supply, and constant command of water are necessary, both for the purpose of working mills and machinery, and for the use of various other operations, which occur, in the progress of different fabrics and manufactures to a state of perfection.

The natural advantages of a country, with regard to foreign relations, are—an insular situation, which (*ceteris paribus*) promises peace and security to the inhabitants, and affords great commercial advantages,—a considerable extent of coast deeply indented with bays—a number of safe and capacious harbours : these endowments of a country dispose its inhabitants, in the first instance, to the occupation of fishing, whereby they are fitted, to become stout and experienced mariners ; in the next place, the possession of these naval advantages affording a ready intercourse with every quarter of the globe, stimulates the people to maritime adventures, awakens among them a commercial spirit, and diffuses the sea-faring character.

It is an unspeakable advantage to a country, in regard to its foreign relations, if it shall have been so placed by nature, as to become an emporium, for the carrying on of some considerable branch of commerce—a resting place, in the prosecution of some long but necessary or highly lucrative voyage—a *depot* for the materials of some very profitable or extensive commercial intercourse.

The natural situation of that country is advantageous, which either has in its immediate neighbourhood, or possesses ready means of communicating with, those countries, which produce the necessities of life and the *prima* of manufactures, which she herself wants, or which, being populous, from indolence, from employment of capital, in some other branch of industry, which they find or think more gainful, do not exercise the same manufactures, which she carries on, and are disposed to become her customers for them.

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In considering the natural advantages of any country, it is scarcely possible to separate that consideration, from a view of its acquired advantages. Some countries, it is true, there are, most happily circumstanced, and highly favoured by nature, which nevertheless possess very few acquired advantages; but such instances may obviously be referred to some radical vice, in the form of government, or gross corruption in the administration on the other hand. Through the operation of freedom and good government, some countries, with very few natural, have attained to very great, and many acquired advantages; but, if all other circumstances are alike, that country will possess the greatest acquired, which has been the most highly gifted with natural advantages.

That country may be said, to have improved its natural advantages, to the utmost; and to possess acquired advantages, in the highest perfection, where agriculture and manufactures proceed, hand in hand, with even and harmonized pace; and where a regular intercourse with foreign nations ensures a constant exchange of its superfluities, (whether necessaries and luxuries of life, or the *prime* productions for the use of manufacture) for other necessaries of life, for the crude materials of profitable manufactures, or for money.

SECT. 2.

Of the natural Advantages of Ireland in particular.

The climate of Ireland is mild, temperate, and salubrious, perhaps equally so, with that of any other country in the world. Its chief peculiarity is a predominance of moisture, but this does not appear to be in any degree injurious to health, and may be productive of some advantages, as we shall have occasion to remark, in the progress of this essay.

According to *Young's* opinion, the natural fertility of *Ireland* is, acre for acre, superior, to that of *England*. The greatest singularity of the island, says that attentive observer, is the rockiness of the soil, but these rocks are clothed with grass. Those of lime-stone, with a
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thin covering of mold, have the most beautiful verdure; sheep-walks seem to be pointed out by nature, as the proper destination for a great portion of the soil of this island.

The abundance of excellent limestone, that is found in most parts of *Ireland* is not only eminently fertile, but affords with a considerable inequality of surface, a great variety of soil, so as to be capable of furnishing a correspondent variety of natural productions; the greatest part of the surface of *Ireland* is adapted to every operation of tillage, yet particular parts are applicable, with superior advantage, to particular destinations.

There are vast tracts of rocky and mountainous ground, these are best adapted for rearing and breeding numbers of black cattle; which are expeditiously fattened, in the rich and moist plains below; and furnish a number of articles for export, which are of great value, and in constant demand; and the mountains and plains, which in concurrence breed fat cattle, that yield all these, could not be tilled, with equal advantage, by the husbandman. Where the soil is both thin and light, on the extensive downs, numerous flocks of sheep may be raised and maintained, and the sheep of *Ireland* afford wool of a peculiar good quality. This country yields an abundance of excellent grain of every kind. The hop plant seems to be indigenous, and grows wild in all our hedges, and may be cultivated here, with the greatest success; so might liquorice, saffron, madder, woad. Rape is actually extensively cultivated in *Ireland*, and returns a large profit to the farmer. It is known that the tobacco plant might be successfully cultivated in this country.

As to flax, which is a plant that requires a rich loam, the success with which it is cultivated, in every part of *Ireland*, shows how well the soil, whose prevailing characteristic is luxuriant fertility, is calculated for its production. A similar soil rendered *Egypt* so famous, of old, for her fine linens.

The deep and boggy tracts of country, which occur so frequently in this island, are chiefly allotted to the production of rape, but would produce inexhaustible stores of excellent hemp, a plant which requires
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a deep and rich earth, and greatly exhausts the soil. Large tracts of ground, which, now, lie wholly waste, and unprofitable, and are a disgrace and deformity to the country, might, were the culture of this important vegetable properly encouraged, produce rich and luxuriant crops; and supply a large proportion of the consumption of the *British* dominions.

Few countries are watered, in an equal degree with *Ireland*. She boasts a multitude of rivers, many of them navigable, and streams innumerable; which wandering over every part of the country, while they refresh the soil, and embellish the rural scene, invite the hand of industry, to lay out bleach greens, establish manufactures, and erect mills, and machinery on the banks.

From her lakes, and number of rivers, which thus intersect the face of the country, in every quarter, *Ireland* derives the most happy capabilities of inland navigation, and were some further assistance lent by art, in opening communications, by cuts and canals, she would afford a cheap and commodious intercourse of all parts of the kingdom with each other, and possess the means of transporting, by water, goods of a bulky and ponderous kind, particularly fuel, which, at present, is a great desideratum in many parts of the country.

Such are the advantages, which the surface of the country offers, nor are the bowels of the earth deficient, in the hidden treasures of the mineral kingdom. Its mines of copper, in the counties, of *Kerry* and *Wicklow*, have long been known, and worked, in a greater or less degree; the same may be said of the rich and extensive lead mines in the county of *Tipperary*. A very rich and exceedingly promising lead mine* is extensively worked in the county of *Wicklow*, at little more than twenty miles distance from *Dublin*, which is likely to surpass in value, the mines of the county of *Tipperary*. Of the lately discovered gold mine I shall not speak, as its extent and value are

VOL. IX.

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* Near the glen of Ismail. The disturbances in the county of Wicklow put a stop to these works.

still unascertained. Most parts of *Ireland* abound in iron ore, and several mines of that metal were formerly successfully wrought, until the undertakers were compelled to desist by the scarcity of timber. At present a rich mine is successfully worked, at *Arigna* on *Lough Allin*, in the county of *Leitrim*, where, fortunately, iron ore and coals are found in contiguity.

What is of infinitely more utility to the inhabitants, than veins of the most precious metals, *Ireland*, in different quarters, produces culm and coals, more than sufficient for the consumption of the country, were the mines worked with spirit, and the conveyance of this necessary article facilitated, by the completion of canals, to cross the country and connect the lakes and navigable rivers. The collieries for stone coal, in the *Queen's-County*, and county of *Kilkenny*, are well known and extensively worked; so are the collieries of pit coal in the county of *Tyrone*, and at Ballycastle in the county of *Antrim*, besides those at *Lough Allin* in the county of *Leitrim*, and several collieries in the county of *Cork*, which yield the common pit or caking coal, in great abundance of excellent quality, particularly the coal pits of the county of *Leitrim*.

There are a variety of mineral substances, which to an indolent and unenlightened people appear of no value, that rightly used may become the *prima* of considerable manufactures, or prove ancillary, in no common degree, to their perfection; and many of these abound in *Ireland*. Ochres are produced, in places without number; a mine of cobalt, a mineral of great use in the manufactures of glass and earthen ware, is said to have been discovered near *Killarny*. *Smith*, who explored the natural history of this country, with some care, asserts that fullers earth and pipe-clay, may be found, in many parts of *Ireland*. He is also of opinion that the *Irish* slate abounds in vitriol, and that copperas and alum works might be advantageously established, in many parts of the island.

Ireland possesses inexhaustible quarries of marble, of distinguished beauty, it affords abundance of excellent building stone, lime for cement, and
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in short, all the materials of architecture, wood only excepted, in the greatest profusion.

Such are the climate, soil, and natural productions of this island—mean-time, her extended shores are deeply indented, with innumerable creeks, and bays; while the immense quantities of fish, which swarm on her coasts, powerfully excite the industry of the people to maritime exertion, by the opulence which they offer to the fisherman, and the profusion of delicious, cheap, and nutritive provisions, which they present to the inhabitants, in general.

Let us now turn to the natural advantages of *Ireland*, with respect to foreign relations and commerce.—Her situation is peculiarly favourable to the encouragement of industry, and advancement of productive labours; placed, as it were, between the new and the old world; communicating readily with all parts of the former, contiguous to the shores of the richest districts of the latter, it seems destined by nature, to enjoy a considerable portion of the commerce between both. The local circumstances of an insular situation—a multitude of commodious harbour opening on every side of the island—numerous rivers—navigable or capable of being rendered navigable, combine with the advantages of its relative position, to favour the industry and commerce of *Ireland*. Add to this, that the ports of *Ireland* are never frozen up, in winter; and that she possesses capacious and safe harbours, opening immediately on the Atlantic ocean, without the difficulty, danger and delay of a channel navigation. An advantage this, which no other country of *Europe* possesses, *France* and *Spain* excepted.

Ireland, from her peculiar situation, should be the great depot of provisions and manufactures, for the *West Indian* colonies, which occupied by their lucrative agriculture, (an agriculture, which affords few, if any of the necessaries of life) and the subsequent preparation of the valuable commodities, which they send to us, require to be fed and cloathed, by the old world; and depend, not only for most of the luxuries and comforts, but even for most of the simplest necessaries of life, on the parent country.

A somewhat similar statement may be made, with respect to the extensive shores, and numerous population of the *American* republic. On that vast continent, manufactures are yet in their infancy, and likely to continue in that state, a long time; partly, on account of the enormous high price of labour, particularly that of artificers; partly, because agriculture, at present, holds out the most certain rewards to industry, and the *Americans* find it most profitable to employ their whole capital, in clearing the lands, in cultivating the earth, and in exporting the produce; instead of turning any part aside, to speculate in manufactures. Satisfied with the employment of capital, in that mode, which they conceive, and wisely conceive, to be the most advantageous; they are content, to depend for a time, and that time will most probably prove a very long one, for their supply of manufactures, on foreign countries.

With respect to the old world, the situation of *Ireland* is equally favourable to an intercourse with the northern and the southern parts of *Europe*; from the former she draws timber, iron, naval stores, some part of the *prima* of the flaxen and hempen manufactures, or the means of bringing them to greater perfection, such, for instance, are barrilla, silk, cotton, and Spanish wool; and she maintains a considerable commercial intercourse of export with those countries, particularly in provisions, and her linen fabricks.

The commercial prosperity of *Ireland*, and extension of her manufactures are particularly favoured by the vicinity of *Spain*, and the facility of intercourse with that country—a country languishing in indolence, where the spirit of commercial enterprize has been extinguished by the paralytic state of the government; where manufactures, arts, and industry of every kind have been suffered to decay, and are, with few exceptions, annihilated, notwithstanding some feeble and ill-directed efforts to revive them. *Spain*, thus destitute of manufactures in herself, has vast empires annexed to her, under the denomination of colonies, all access to which she guards, with the most jealous care, while
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the endeavours to confine to herself the business of supplying them with various manufactures of the old world, which the new is unable, or unwilling to fabricate for herself; and which old *Spain* is equally unable to produce. This situation of *Spain*, and her colonies affords room for a most profitable commercial intercourse of *Ireland* with that country. In fact, these opportunities have not been wholly neglected; and of late years, in addition to a considerable export of provisions, a very advantageous traffic has been opened, in the manufactures of this country; particularly white linens, of which *Ireland* at present, sends large quantities to *Spain*, for the consumption of her colonies; and unless some unfortunate misunderstanding should take place between the *British* and *Spanish* governments, this trade promises to be permanent, and to become still more extensive.*

Such are the natural advantages of *Ireland*; and so great are they, that, in the year 1634 the exported commodities of the country are stated, to have been twice as much as the imports; and her shipping is said to have increased an hundred fold. After the restoration, for many years, even down to the year 1688, *Ireland* continued in a very prosperous condition, and was considered as the most improved, and improving spot of ground in *Europe*.

SECTION 3.

Of certain Disadvantages, under which Ireland labours.

Before we pass, from the natural advantages of this country, to the manufactures, of which they seem most susceptible; it may be proper, to turn the reverse of the medal, and take a cursory view of some disadvantages of nature, under which this country at present labours. The most prominent are, want of timber, and want of fuel.

What

Want of timber aggravates the expence of building, and, of course, enhances the rent of houses. It encreases, also, the price of machinery; and of all utensils in which wood is employed. This augmentation of price in the habitations of man, in workshops, warehouses, mills, machines, and utensils of trade, must prove an obstacle to the progress of manufactures, and a discouragement of industry, by operating as a tax on the manufacturer. Want of timber operates, also, as an impediment to every sort of industry (agriculture not excepted) by encreasing the price, and consequently acting as a tax, not only on ploughs, harrows, and all instruments of rustic labour, but on all carriages, and machines for the transportation of commodities from place to place. But one of the most serious lights in which the scarcity of timber can be viewed, is with respect to the construction of ships, and its prejudicial influence, both on the commerce, and external defence of a country.

The necessary consequences of the scarcity of timber must be, that fewer ships, boats, and other machines for water carriage, will be constructed, and such as are built will stand the proprietor in greater sums. This will tend, in a double respect, to raise the price of freight; both, by lessening the number of ships, and by encreasing the first cost of shipping. The encreased price of freight acts as a tax, on commerce and manufactures, in a two-fold capacity; (and both its actions are accumulated to the detriment of industry)—it increases the charge of importing the raw materials of manufactures, for which we depend on foreign countries; and it increases the charge of carrying our manufactured produce to the foreign market. It lays on the industry of the manufacturer, a tax equal to the accumulated increase of freight, both for the import of the raw material, and the export of the manufactured commodity; and it subjects him to a disadvantage in the foreign market, proportionable to the full amount of the tax on his industry, and in the home market, proportionable to the encreased price of the raw material.

The

The want of oak woods in *Ireland* not only operates to the prejudice of land and naval architecture, but, the consequent scarcity and dearness of oak bark, (for a supply of which we chiefly depend on foreign countries) are very ruinous to the various manufactures of leather in this country, and too generally lay the people under a necessity, of exporting the hides of their cattle raw, and importing tanned leather.

I may reckon among the disadvantages under which *Ireland*, at present, labours, The spirit of insubordination, the temper of agitation and ferment, the working leaven of revolution, disposing men to wish and look for change and innovation; and, to visionary expectations of sudden opulence, without previous labour, which are highly injurious to the spirit of patient and honest industry. Hence have arisen those outrageous and illegal combinations to enhance the prices of labour, which are a reproach to a country, and must prove the bane of commerce and manufacture. No sooner does an increased demand arise for any branch of manufacture, or any particular kind of commodity, which requires labour in the preparation, but, instantly, the workmen concerned in it combine to extort higher wages. This disposition is most fatal, to the interests of the country at large, and even to the peculiar interests of the wretched men, who blindly sacrifice permanent prospects, and a sense of duty and deference to the laws, to a brief present gain, and indulgence in licence and intemperance. The consequences are, that the country will thus be thrown out of the possession of foreign markets, which are only to be secured, by the cheapness and goodness of manufactures. They discourage master manufacturers from commencing new works, or extending those already established: and, it must be remembered, that the exorbitant price of labour falls with a severe re-action on those who enhance it, and makes them pay dearer, in proportion to their own extortion, for every necessary of life. If the Mason, the Slatier, the Carpenter, combine to exact enormous wages from their employers; the Taylor, the Shoemaker, the Hatter, the Weaver, the rustic Labourer will do the same; and thus these foolish and wicked men make their crime its own punishment

nishment, since they became the cause of raising on themselves the price of every article of food and cloathing they consume, of every tool they employ in their respective trades. Let not, then, the combining tradesman, or labourer, vainly imagine, that he shall become richer, or increase his comforts by extorting encreased wages from his employer; nothing can be farther from the truth: for if he gains, on the wages of the one trade exercised by himself, he is sure to lose, in proportion, on all the trades and callings, exercised by all other labouring men in the community: for, to every one of them he will find occasion to resort, in the course of the year, by purchasing something or other which it produces. He will find himself obliged to pay dearer, than he otherwise would, for his bread, his beer, his potatoes, his meat;—the hat, the coat, the shirt, the shoes he wears;—for the apparel of his wife and children;—for the room which he inhabits;—the very bench or stool on which he sits, and the tool, or instrument, with which he executes his labour. Thus, by the destructive spirit of combination, the labouring poor are, without being sensible of it themselves, engaged in a cruel intestine warfare of exaction, and eagerly employed, to distress and impoverish each other.

There are two great causes which promote the spirit of unlawful combination by a sort of authority, and the prospect of impunity. The existence of corporate privileges, tending to raise an improvident and impolitic monopoly of employment; and the deficiency of the laws, as they now stand, which do not sufficiently provide for a cheap and summary mode of redress, in all cases, against the violence and outrage of the combining manufacturer. It is a melancholy truth, that, the labouring people, particularly, in the metropolis of *Ireland*, where many manufactures are carried on, and many improvements in buildings are projected, have, with one consent, entered into combinations to raise the price of labour, in their respective departments, to an exorbitancy wholly inconsistent with the prosperity of the country, and destructive of the extension and improvement of manufactures.

But

But the grand desideratum of *Ireland*, with regard to the progress of all manufactures, is fuel. Abstracted from a consideration of the health and comfort of the mere individual, in which point of view, firing must be considered as a most important necessary of life; there is no manufacture, or trade, in which fire is not requisite. In most it is an active instrument, either through the whole, or in some particular part of the process.

Not to speak of glass and potter's ware, of iron works, founderies, and the various branches of hard ware, that work on metallic substances; of breweries, distilleries, and the manufactures of soap and candles; in all of which fire is obviously a chief agent. Quantities of fire are necessary to the linen manufacture;—without fire the spinner cannot spin;—the weaver cannot weave in frosty weather;—machinery cannot be kept in order without *fire*. The boiler, the hot calendar, for glazing linens, diapers, and cottons, require large quantities of fuel. Fire also is employed, in a great degree, in many parts of the cotton manufacture, particularly in finishing velvets, corduroys, and other goods of that kind, some of which are dressed in a very intense heat over hot plates of iron. In the woollen manufacture, the operation of pressing cloaths requires a strong heat, the dyer's vat requires a large supply of fuel. Copper-plate printing through all its branches, requires the assistance of fire. Even carpenters, and cabinet-makers require the assistance of fire, in many parts of their work. Shoe-makers cannot work in frosty weather, without the help of fire to preserve their leather pliable, and their wax of a proper temper. Book-binders, gilders, and many other artists and manufacturers, who might be enumerated in this place, employ fire in almost every process of their trades; and against all these the scarcity of fuel operates, as a heavy tax on the exertion of their industry, and an obstinate impediment, to the progress of their manufactures. But what are these to the ruinous influence of an host of absentees warring against their prosperity?

I hope I shall be excused this digression. The desiderata, and disadvantages of a country ought to be taken into account, as well as

its endowment and advantages; that we may the better judge what manufactures can be profitably pursued, what should be relinquished, as desperate, and where the principal force, of legislative encouragement, or relief ought to be applied.

SECT. 4.

General sketch of Manufactures to which the natural Advantages of Ireland might be supposed to lead her Inhabitants.

Industry may bring to perfection, may combine, modify, and employ in different productions of art, the productions of nature; she cannot change their essence. Nature is liberal to those who cultivate her; but, it is for man, to follow and embellish, not to force, to violate, or counteract her. Taking nature for our guide, the industry of the country must be various, as the face of nature, in different regions. It must wear one form on the coast, another in the inland province, one among the mountain crags, another in the rich loamy vale. The deep and inexhaustible foil of *Russia* is favourable to the production of hemp; the mountains pregnant with iron, and the vast forests supplying timber to smelt the ore, lead the hardy natives of *Sweden*, to turn up the flinty entrails of the foil. The abundance of the murex on their coasts, formerly led the industrious *Tyrians* to establish manufactories of that precious dye, so famous in the history of ancient commerce.

General fertility of soil, affording an abundant supply of provisions, seems, at first view, equally propitious to every kind of manufactures; as it facilitates the support of all those whose labour is productive, though they do not cultivate the earth. But the nature of the soil, and the kind of husbandry, to which it necessarily leads the intelligent farmer, must have a considerable connection, with the prevalence of one species of manufacture, with which they are connected.

For

For instance, a smooth turf on hills of moderate ascent; a lime-stone rock lightly covered with earth, and producing short and sweet herbage, naturally lead the proprietor of such ground to rear a breed of sheep. The fresh and juicy herbage pours health through the veins of the animal, and improves the quality of his fleece, both as to fineness, and delicacy of thread, and length of staple. The breeding of sheep, and the excellence of their wool, will be still more favoured in a mild and temperate climate, where the air is pure and moderately warm, and the sea-breezes allay the heat of summer, and moderate the cold of winter. In such a climate, the flocks are not scorched or incommoded in summer, nor is the shepherd obliged to house them in the severity of winter. Such happy circumstances of soil and climate naturally lead to an introduction of the woollen manufacture. Such is the climate, and such a considerable part of the soil of *Ireland*.

The soil of *Ireland* is, in many places, as I have already observed, so well adapted to the growth of flax and hemp, that the husbandman must find the cultivation of those useful plants a most productive species of agriculture; and the natives of the country, being supplied with abundance of the raw material, of the best quality, and on cheap terms, must naturally be led, to the extension and improvement of the linen and hempen manufactures.

The natural advantages of *Ireland* disposing the farmers, in many parts of the country, to fatten large herds of black cattle, on rich and rank pasture grounds, which could not be so profitably employed, for any other purpose. The people must be led to slaughter vast numbers of them, and to embark deeply in the trade of saving and exporting provisions; add to this, that the mildness of the winters in *Ireland* is peculiarly favourable to the operation of curing or saving salted meat; in which respect this island has prodigious advantages over *America*, *Holland*, *Holstein*, and other countries, which are led, by the abundance of black cattle, to trade in provisions. This trade, independent of the business of curing and cooping the provisions, introduces a variety of trades and manufactures, which are, in some shape or other,

dependent on, or connected with it; either by supplying them with the raw materials, from whence they are formed, or by proving ancillary to them, in some stage or other of their operation, by certain substances which it affords. Such are the trades of tanners, shoe-makers, saddlers, coach-makers, harness-makers, upholsterers, glovers, book-binders, parchment-makers, in short, all those artists, who are employed in preparing the hides of oxen, and skins of other animals, and forming them into various utensils, of use or luxury, into different parts of the wearing apparel of men or women, and applying them to various other purposes of life.

Where abundance of cattle are slaughtered, not only for domestic consumption, but for exportation; extensive manufactures of candles and soap may be established. The woollen manufacture also derives considerable advantage from this circumstance. Large quantities of grease and animal oil are furnished for the use of several wool-combers. Even the bones and offal of animals are applied to many useful purposes, and become the foundations of very important manufactures; for instance, glue, which is produced from the feet of sheep and oxen, and shreds of their skins. As to the bones, they are applicable to a variety of uses. Hartshorn is extracted from them; cutlers and turners employ them, in knife-handles, and a variety of instruments and toys. The bones of animals, and the inside of the horns, with the hoofs of oxen, employ a number of people in making molds; a considerable object of industry, trifling as the article, at first glance, may appear. The very blood of cattle has its use and value; being necessary for the process of refining sugar. Blood, together with the bones and hoofs of animals, are applicable to the manufacture of sal ammoniac, and Prussian blue,* and some other chemical preparations. The transparent part of horn is employed in a variety of manufactures, which it is not necessary here to enumerate. The foregoing catalogue, which is a tolerable long one, may serve to shew, in what various

* Prussian blue is made of the dried blood, horns, hoofs, bones, and tendons.

rious shapes an abundance of cattle may be the parent of manufactures, or ancillary to them. And to every such manufacture the natural advantages of *Ireland* are adapted.

In proportion, as *Ireland* abounds in metals, and other mineral substances, her natural advantages are favourable to manufactures of every kind, in which those metals, or mineral substances may be employed. The same may be asserted, with respect to the manufacture of salt, and erection of salt-works, to which, we might suppose, the extent of sea-coast would dispose the people of *Ireland*.

So much for the native materials of manufactures. As to the arts and manufactures, whose basis rests on imported substances, *Ireland*, by her excellent situation for trade, and the goodness of her harbours, is equally favourable to all such; and her happy situation for commerce favouring export, is equally favourable, to every species of manufacture.

The number of streams and rivers in *Ireland* is a natural advantage, adapted to every manufacture, without distinction, in which mills or machinery worked by water, may be employed, or where a command of that element is necessary. The abundance and cheapness of provisions is not more favourable, to one manufacture than another; but is propitious, in general, to all.*

* The statistical accounts which are coming in from every county of *Ireland*, will have an excellent effect, in bringing the people acquainted with the internal resources of *Ireland*.

CHAP. II.

General Observations, on the preference of one Manufacture to another.

SECT. I.

A limited Capital should not embrace too many Objects at once.

To attempt prematurely, without a sufficient capital, to carry on agriculture, manufactures, and exports, all at once, is not the shortest way, for a society, any more than individual, to acquire opulence. The capital of all the individuals in a nation has limits, in the same manner as that of a single individual; and is capable of executing only certain purposes. The capital of all is increased, in the same manner, with that of a single person, by the accumulation of savings. It is likely to increase faster, when employed in that way, which yields the greatest revenue to all the individuals of the country. The principal cause of the rapid progress of the American colonies, to wealth and greatness, is, that almost the whole capitals have been hitherto employed in agriculture.

When we talk of plans for the improvement of manufactures, and the encouragement of industry; we ought to consider, as well the wants and deficiencies, as the natural advantages and resources of the country. A striking deficiency under which *Ireland*, at present labours, is the want of *capital*, * a want, which should teach the political economist, to be moderate in his speculations, and to proceed with caution
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* I was much surprised to find a late writer on the manufactures of *Ireland* assert that want of capital is not one of the disadvantages of *Ireland*; this is a new discovery.

to the extension of manufactures. Where the capital of a country is confined, it is obvious, that agriculture ought to be the first and great object, in which it should be employed. Having attended sufficiently to the interests of agriculture, we proceed, in the next place, to the advancement of arts and manufactures. In the present limited state of capital, in this country, it would be perfect madness to embark, at once, in all the manufactures, of which its natural advantages are susceptible; it would prove the certain means of succeeding in none.

Although the opening of new sources of effectual and productive industry gives new nerves to the collective strength of the country, and must, of necessity, be a great object of political economy; we should guard ourselves from the delusion of sanguine or dishonest projectors, deceived, or deceiving, who dazzle us with their magnificent speculations, and detail their plans for public works, commercial undertakings, and the establishment of new manufactures, without regarding the first principles of commerce, or adverting to those rules of plain common sense, which ought to guide every exertion of industry. Nothing is more injurious to the political, as well as the natural frame, than exertions beyond its strength. The natural effect of such exertions will be debility and paralytic disease. To preserve ourselves from such unhappy consequences, we should beware of false opinions of our own strength, whether they proceed from others, or from our own hopes and imaginations.

Many manufactures will at once present themselves to consideration, and contend for a preference. Different manufactures may possess different merits, and found their pretensions on various grounds; it will be necessary to compare them, with each other, and in forming this comparison, the legislator must govern himself, by taking a compound ratio, of merits and demerits. Political economy requires, more than, perhaps, any other branch of science clear ideas, and accurate distinctions; and there is no subject, in which the speculatist is more liable to confusion and inaccuracy, or where they produce more injurious consequences. We see this particularly exemplified, with respect to manufactures.

factures. Few people discriminate sufficiently; when they project the establishment of new manufactures, they are too apt to imagine, that all sorts are equally beneficial to the state; or have no rule to govern them, but the proportional value of the manufactures, that may be worked up in a given time.

Where the means of a country are not sufficient to give activity to the whole range of manufactures, to which the natural advantages of such a country may be adapted; a wise legislator will enquire to what manufactures his attention may be directed with the greatest assurance of consulting public utility. To direct him in making this enquiry, he will consider, not merely the intrinsic excellence and value of the manufacture abstractedly considered. He will weigh other motives of a moral and political nature, resulting from the state of society; the temper and habits of the people, the progress of agriculture, the diffusion of science and industry, the pecuniary resources, the popular prejudices, the form of government, and the foreign relations of a country for all these must have more or less influence, on the prosperity of particular manufactures.

SECT. 2.

Manufactures considered on the ground of intrinsic Excellence and Value.

Manufactures are to be considered—with regard to the wants and comforts of human creatures in society—the quantity of labour of individuals, or productive industry, that they employ—or the quantity of capital, that is requisite, to carry them on, with effect. Some manufactures are necessary to the protection of the individual, from the inclemency of the elements—to his subsistence, health, ease, and comfort.—These (to a certain degree) *must* be procured; and of course the arts
which

which supply them, must be cultivated, in every country.—Habitations—aliment—cloathing; and the utensils, for obtaining and preparing necessities of life, among which the most important, perhaps, are the instruments of husbandry—all these, in a superior or inferior degree, in a more rude or perfect form; may be found, among the most barbarous people; for they depend only on the natural wants of man. To these we may add the manufacture of armour, or weapons, for defence, and offence, of which no tribe or nation has been found wholly destitute. Other productions of human labour, depend on the artificial wants, the luxury, the caprice of man, in a more advanced and polished state of society. Productions of the first kind, which I have mentioned, we may call articles of *prime* and *original necessity*, and the manufactures which produce them, manufactures of *prime* or *original* utility. The latter class we may call articles of the *second* or *derivative necessity*, and the manufactures, that produce them, manufactures of *subordinate* or *derivative utility*.

Productions of the first class, will, at all times and seasons, afford a source of employment, to productive labour. The latter class of productions furnishes employment more fluctuating and variable, according to the refinement, luxury, and opulence, of the people; and subject to a thousand changes of fashion and caprice. This distinction ought to engage the serious attention of the legislature; when it comes to consider the various objects of national industry, and to apportion the measure of encouragement due to the various exertions of labour, and the different productions of art, or to consider them as objects of taxation. With respect to the quantity of labour and skill, which may have been employed, in the production of any commodity, and how far it is changed from the rude state of existence, as a *primum* or raw material, the manufacture which, *cæteris paribus*, employs most productive labour, is *cæteris paribus*, most advantageous to the community and legislature.—Butter, for instance, flour, malt, bread, beer, common salt, kelp, pig, and bar iron, and a thousand other objects of commerce re-

quire much less productive labour, to prepare them for the market, than the same iron, when wrought into cutlery and hardware; than pottery, glass, paper, and linen or woollen cloth. With respect to this distinction, we may call the former class articles of *rude*, the latter articles of *consummate* industry. Productions of the first kind are, at the same time, finished manufactures, inasmuch as they have employed some distinct class, or classes of manufacturers, and are in a fit state, for being brought to market; and raw materials, inasmuch as they require to be prepared, for the uses of life and accommodation of man, by other and more exquisite operations of industry, thus, tanned leather is formed into shoes, iron into knives, linen or woollen-yarn into webs of cloth.

There is yet a further distinction, with reference to the intrinsic value of the *primum* or crude material. The labour of man is sometimes employed, on a costly *primum*, of great original intrinsic value. Sometimes, the *primum* is cheap, and of small intrinsic use or estimation, in itself, and the labour of man is all in all. The former is strikingly the case, in the manufactures of jewellery, gold and silver. It is also the case, in a subordinate degree, with regard to the linen, the woollen, the cotton, or above all, the silk manufactures. In the manufactures of watches, of the highly finished kinds of hardware, and toys; of many chemical preparations, for luxury, or medicine; of various ingenious and complicated machines, of considerable price, for different purposes; of mathematical and philosophical instruments; and of arms, of every kind; the *primum* or materials, from whence these different articles are fabricated or constructed, are of small, indeed, comparatively speaking, of no value; the adventitious value of human exertion, in skill and labour, is, as I have said above, all in all. There are yet other fabrics, of a mixed nature, where, though the *primum* itself, is comparatively of little or no value, the manufacture requires an expensive apparatus of machinery, buildings, and offices, costly in the erection, expensive in the repairs, or liable to heavy rent. Here, the various

various matters, necessary for the production of the commodity, must be taken into account, and considered, as a stock in trade, in addition to the supply of *primum*. Such are the manufactures, of linen, wool, and cotton, of paper, glass, of bricks, tiles, and potters-ware, with breweries and distilleries. With respect to this distinction; manufactures may be divided into two classes—articles of *original*, and articles of *adventitious* value.

Articles of *adventitious* value ought to be preferred, to those of original value, for they set in motion an equal quantity of productive labour, at an inferior expence; in other words, unequal capitals produce equal profits; and the return from the manufacture of adventitious value, is much greater, in proportion to what is advanced out of the fixed capital of the nation, on the credit of the manufacture.

There may be circumstances, that, on a comparison of different manufactures, and combination of these principles with each other, may vary the conclusions, that would result, on a first view of the foregoing premises, and from a consideration of manufactures, abstractedly and individually taken.

It may be wise, to encourage the production of an article of *rude* and *inchoate* industry, and great original value, if it is, at the same time, an article of the first necessity; for the wants of the people will require a constant supply, and ensure a ready market; and thus, the smallness of the return will be counterbalanced, by its certainty and quickness.

Where the productions of a manufacture are in such constant demand, for the common purposes of life, that, to procure them from foreign artists, would occasion a great drain of specie, or exchangeable commodities, from the country; and, in consequence of it, a general poverty, which would end in the ruin of all industry, and manufacture; it may be wise to postpone the more lucrative manufactures to such as are more necessary.

It may, at times, be expedient to encourage manufactures of *secondary utility*; if they are either manufactures of *consummate industry*, or

of such small original, and large derivative value, that the stock of national produce, or the capital of the country, will acquire more, by the cultivation of these manufactures, with a preference, than it can lose, by resorting to other countries, for articles of the *first necessity*. It is on these principles that a country, which has brought to perfection a variety of curious and elaborate manufactures, may find it contribute most to public prosperity, to employ its productive hands, in manufactures, and to resort to its neighbours, for a supply of corn; rather than it should employ them, in the cultivation of the soil. On the other hand, if the country yields any productions of the earth, that are of great value, and in general demand, the inhabitants may find it a measure of prudence, to relinquish the general detail of manufacture, to countries less favoured by nature; and attach themselves to husbandry, which offers such advantages, to the branches of manufactures, which are necessarily dependent on it, or with which it is intimately connected.*

In estimating the comparative excellence of manufactures, or the degree of encouragement, which one may deserve from the legislature, in preference to another, where the natural advantages of the country are equally favourable to many; there is another point of view, in which manufactures may be considered; namely, with respect to agriculture, and their tendency to promote it. Such manufactures as have the greatest tendency to promote agriculture have (*cæteris paribus*) the fairest claim to encouragement from the legislature. The capital, that is acquired to any country, by manufactures and commerce, is all a precarious and insecure possession, till some part of it has been secured and realized, in the cultivation of lands.

When

* This is obviously the case in the *West Indies*; the people of the American states also, find it prudent, to employ the whole capital of the country in agriculture, and import the manufactures of which they stand in need. Of late years, however, the political economy of *America* has undergone some change; and, were they not checked by the exorbitant price of labour, the United States would make a considerable progress in manufactures; as it is, they have applied themselves, with much spirit, to the manufactures of cotton, and of paper.

When the capital of a country is not sufficient for all the purposes of productive labour : in proportion, as a greater share is employed in agriculture, the greater will be the quantity of productive labour, which it sets in motion in the country ; as will, likewise, be the value, which its employment adds to the annual value of the land, and labour of the society. Capital, employed in the support of manufactures, must, of course, put into motion the greatest possible quantity of productive labour, that a capital employed in manufacture can do ; when it supports a manufacture, that, at the same time, promotes, by a necessary influence, the cultivation of land.

Where the manufacture necessarily requires the aid of machinery, in a great degree ; or stands in need of shelter for the operators, so as to require the erection of extensive buildings, before it can be properly carried on ; or where those, who practise it, must necessarily serve an apprenticeship, before they can acquire a proper knowledge ; the establishment of such manufactures must be considered as beneficial to the interests of agriculture.

When such manufactures as these are established in a country, by convening a number of people in one place, who must all be fed by the farmer, they establish a ready market, for the produce of his ground, and that at his very door ; and save him the additional expence and labour of sending to a distance, in quest of purchasers, thus, these manufactures, by furnishing the husbandman with a constant supply of ready money, and augmenting his profits, will give energy to his exertions, in the cultivation of his farm.

It is also to be observed, that some manufactures, not only employ directly a number of productive hands, in their immediate object ; but also employ a considerable quantity of productive labour, in providing the instruments and apparatus requisite to the commencement of the manufacture. Thus, a large preliminary establishment, in buildings, various tools, and complicated machinery, will employ the brick-maker, the stone-cutter, the lime-burner, the mason, the slater, the smith, the carpenter,

carpenter, the joiner, the mill-wright, the rope-maker—these may be stiled manufactures of ramifying or electrical industry, and, from their extensive influence, in diffusing productive labour, particularly deserve the encouragement of the legislature.

I shall conclude this section, with observing, that, as the population of a country constitutes its strength, and population is (*ceteris paribus*) proportionable to the number of people, for whom the agriculture, manufactures, and foreign commerce of the country, can find employment, whereby they are supplied with the necessaries of life; those manufactures, will, if other circumstances are on an equality, most deserve the encouragement of the legislature, which, in the process of their respective fabrics, to perfection, employ the greatest number of individuals; and are most favourable to general industry. But let not this assertion be understood to militate against the introduction of useful machinery, or compendious processes, which abridge the labour of the human hand in any particular branch of manufacture; these though, at first, they seem to have a tendency to diminish the number of persons employed, have a contrary effect.

SECT. 3.

Manufactures still further examined on the ground of their intrinsic Excellence and Value.

When we shall come to apply the principles contained in the preceding section, by making a choice of manufactures; those will deserve, *ceteris paribus*, to be most cherished, which afford the fairest prospect of a constant and regular demand, for the fabrics which they produce. Manufactures, which furnish articles of the first necessity, and have their foundation, in the uniform wants, and feelings of men; are to be preferred to others; (though of a more perfect and elaborate character,

character) which minister to luxury, and are under the dominion of vanity and caprice, though the latter may be productive of greater present profit, as, indeed, is most commonly the case. Luxury is wholly governed by fashion: what it likes to-day it loathes to-morrow.

Where the demand for any fabric is apt to vary; the poor artisan will often be destitute of employment; a circumstance, which is always attended with the most distressful consequences to society.—Intemperance—dissolute manners—robbery and other crimes, the progeny of a fatal marriage between misery and temptation,—formidable riots,—in short, all forms of ill, to which mingled idleness and despair, relaxing every mental faculty, can lead unhappy mortals.

When a manufacture affords a regular and unfailing source of employment; it is not only favourable to public prosperity, but also to private morality. Continual gains, however small, lead the manufacturer to views of accumulation; and the accumulation of capital, in the whole, is made up, by the several accumulations of individuals. Thus is regular employment favourable to public prosperity. With respect to private morality, constant industry, with its attendant gain, will act as a corrective of manners, among the lower classes. In them, the love of gain, to a certain degree, being necessary not only to their own maintenance, but to the preservation of a number of helpless beings, who look to them for subsistence, is not only in itself a virtue, but leads to sobriety, temperance, and all the other negative virtues.

On the contrary, where manufactures are of a fluctuating and capricious kind, like the idle and worthless consumers of them; at one time exhibiting a rapid sale and importunate demand, which can hardly be satisfied, by the utmost exertions of the workman; at another time, languishing, in almost total neglect; at one time producing a return of profit, both to the maker and vender, infinitely surpassing the just proportion of the first cost of materials, and the labour bestowed on them; at another time unfashionable, and despised, rejected in the market, a source of disappointment and despair to the miserable artisans, who took

to

to them for subsistence; the character of the workman is influenced by the nature of his manufacture.

The great and unexpected gains attending such factories, in their prosperity, often intoxicate and mislead the mind of the manufacturer. He flatters himself, that thus it will always be. He disposes himself to expence and luxury, beyond his situation and means; and adapted to the large gains of the present hour; not to the average of his probable regular earnings. All this produces in him, an encrease of artificial wants, and creates a number of false appetites, that render his state more completely wretched, when his evil hour comes, when the manufacture languishes, and the stagnation of demand reduces him to poverty.

The manufacturer seeing these fluctuations of the trade, reflects, on the vicissitude of human things, and determines to make the most of the present moment. He sees the extravagant profits, which his employer and the retailers again, who are supplied by his employer, extort from their customers. He determines to have his share of the contribution, which is levied on folly and fashion. He demands exorbitant encrease of wages; if his employer refuses to comply, combination to raise the price of labour, riots, and outrage of every kind succeed.

Anderfon has a sensible observation, applicable to the comparison of manufactures with each other. "The most necessary study (says he*)" "for those who wish to promote manufactures, is to discover what" "kinds of them can most easily and readily be established, among the" "people." To those, which possess this qualification, the attention of the legislature ought to be particularly directed. Some of the foregoing observations will be found useful, in the solution of this problem. We may say, in general, that those manufactures may be the most easily established in any country, which minister most immediately to the natural

* Letters on Scotland.

tural wants, and necessities, of mankind, and that, as the expediency of introducing manufactures of luxury is doubtful, so also is the difficulty of their first introduction.—Great manufactures may still further be considered, with regard to their influence on the health and comfort of the individuals who exercise them, and their tendency to prove noxious and injurious, or offensive to the community at large.

There may be also, perhaps, some trades among the various forms of industry, into which the invention and the avarice of man branches out his labour, which exhibit human nature in a state of debasement, and furnish an offensive and humiliating spectacle. Such manufactures should not, any where, or on any account, be encouraged by the legislature; the commodities should rather be imported.

Some arts and manufactures are injurious to the manufacturer, by the confined and unwholesome posture, in which his work must be performed, or the sedentary habits of life, to which he must confine himself. Others, again, are conversant, about deleterious substances, or induce a necessity, of encountering noxious effluvia. Weaving is a manufacture of the first kind; the preparation of some dye-stuffs, painters' colours, painting, gilding, refining metals, all arts and trades, in which quicksilver is employed, are of the second. The manufactures of lime, of bricks, of tiles, of soap and candles, of glue, of sal armoniac, of musical strings or catgut, are of the third description.*

With respect to all such trades or manufactures as are strikingly injurious to the health of individuals, or offensive to the public; they are less deserving of encouragement from the legislature than others, many of them are actually necessary, to the existence or accommodation of man, and must be carried on, by some persons or other;

VOL. IX.

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but

* They are manufactured from the entrails of animals, drawn out and twisted; I recollect the trial of a presentment, in *Dublin*, against some people, who had commenced a manufacture from the same materials, of the skins or envelopes for *Bologna sausages*; part of the process was, by leaving the subject matters in a putrescent state, till the coats of the intestines were separated. The presentment was allowed.

but, there is no danger of their being abandoned, or of the public wanting the necessaries, or conveniences, which they can supply. There will always be found willing and self-devoted victims of avarice, who will be tempted, by the prospect of gain, from constant employment, superior wages, or the monopoly of a manufacture disagreeable or formidable to the generality. We always find persons ready to volunteer on the forlorn hope of manufactures and industry; and to undertake the most loathsome and dangerous tasks for hire. The painter's colic, or the paralytic attacks, that threaten gilders, do not deter numbers of people from pursuing those walks of industry. All that can be expected from the legislature, with reference to noxious and offensive, but necessary manufactures, is, if possible, to devise, and to establish by law, certain methods, and precautions for rendering the process, and different operations in them less injurious to the individuals, who carry them on, and less offensive to the community. Should that be impossible, the mischief and danger attending these noxious trades should be confined and restricted, as much as possible; and care should be taken, that those only, who gain, should be annoyed and endangered by them. This may be effected, by confining the manufactories of them to lonely situations, far from the vicinity of large towns.

SECT. 4.

Manufactures considered with respect to the political Circumstances, the domestic Habits, and foreign relations of the Country.

When we come to consider manufactures, with respect to moral causes, of their prosperity and decline, or political motives, that should guide a legislator, in the giving a preference to one manufacture over another, —we must attend to the population of a country,—its capital,—the
primum,

primum, on which the manufacture operates, whether domestic produce or foreign,—the manufacturing habits, of a country, and whether the manufacture is wholly new and unknown, or already established, and understood. Whether it remains for the people, to establish a character, and gain possession of a market for the manufacture—or whether they have already formed a manufacturing character, and fixed themselves in a market;—whether the productions of a manufacture have a probability of becoming considerable objects of export; whether the manufactures in question, are likely to excite the jealousy, or to suffer, from the rivalry of other countries.

The population of a country, by furnishing abundance of labourers, must render labour cheap, and prove favourable to the extension of manufactures, in general, but the advantages of a full population, and the disadvantages of the contrary situation of a country, will be particularly felt; should the legislature, or an individual, have it in contemplation, to establish a new manufacture. It is an undertaking of some difficulty, (as we shall more fully perceive hereafter) to establish a new manufacture, of any sort. It is long before the inhabitants of a country can be brought to perform the several operations, with such ease, and dexterity, as are necessary for the bringing it to perfection. In a populous district, where the inhabitants are crowded together, so as to be immediately under the inspection of those who may instruct them, the inconveniences are less sensibly felt; but, in a region, where the population is scanty, the people can hardly be brought together in any considerable number, to receive instruction.

The difficulty will be increased, if the crude materials, on which the manufacturer is to work, are not the home produce of the district, but brought from a distance, at considerable expence. No master manufacturer would willingly entrust materials of much value to inexperienced operators, at a distance from himself. He cannot here, as in a more populous district, give a little at a time, so as to be no great loser if the tasks are not altogether well done: for the expence of carry-

ing away the raw materials, and bringing back the manufactured goods, would be more than he could support. On this account, master manufacturers are deterred from settling and establishing new manufactures, in thinly inhabited regions; and the inhabitants, even were they willing to be instructed, are deprived of the knowledge of the new arts.

It appears, that there is still a want of capital in this country; were not this the case, the interest of money in *Ireland* would fall, from the present high rate. It appears, that the market for money, is overstocked with customers, and understocked with the commodity; in other words, that the quantity of money to be lent is comparatively small, when considered, with a reference to the number of persons, who want to borrow. The capital, being thus confined, must be employed, in the way, which will yield the greatest revenue to all the individuals of the country. For a country, in such a low state of capital, to attempt the establishment of all manufactures, at once, within herself; and to prohibit the manufactures of other countries, instead of advancing her progress, towards real wealth and greatness, would retard it; perhaps, precipitate her into ruin. A country, which is conscious to herself of a want of capital, should consider her own deficiency, and be cautious, how she embarks in new, and problematical speculations. Undertakings, that are hazardous, in their first commencement, and require an extensive and elaborate machinery, and costly apparatus, are ill suited to the state and condition of such a country.

Manufactures, which operate on a primum, which is the produce of the country, are (*ceteris paribus*) entitled to precedence. In the first place, it is to be considered, that such a manufacture not only sets in motion, the industry or productive labour, of the workmen immediately engaged in the manufacture, but also of the persons, who are employed in raising or preparing the primum, on which it operates. The linen manufacture, in addition to those, who spin the yarn, weave the web, whiten it on the bleach-green, and finish it at the calendar, gives employment, to the farmer, who raises the flax, and to a variety of persons

sons, who dress and prepare it for the spinning wheel. So, the woollen manufacture, in addition to the persons employed in its numerous branches, sets in motion the industry of the farmer and his servants, who tend the sheep, and shear the fleece.

The manufacture of shoes not only sets in motion the industry of the shoe-maker, but also of the tanner, who prepares the leather, and in some measure of the farmer, who feeds the ox. The manufactures of hardware and cutlery, not only set in motion the industry of the smith, and of the cutler, but also of the miner, who raises the ore, the refiner, who smelts and prepares it, and of those, who provide fuel, for the various operations on the metal, in its progress to the cutler's shop. Where a manufacture is conversant about an imported material, all this derivative encouragement is lost to the native country, and employed, to excite the industry of a foreign, perhaps, a hostile nation.

In the second place, when a manufacturer depends on a foreign state, for the materials of his manufacture, he is in the power of that state; which, by stopping the supply of those materials, by throwing the manufacturers out of employment, and reducing them to beggary and ruin, may excite tumult, and insurrection, and endanger the safety and happiness of the whole community.

In the third place, an imported primum must be dearer, in proportion to the intrinsic value, than one, which is the native growth of the country. Where the materials are bulky, and the country, which produces them distant, the expence of freight, commission, duties, carriage, and other charges, that attend the conveyance of the material, from a distance, become so high, that it is impossible for the distant manufacturer to sustain a competition, in the foreign market, with those, who find the raw material nearer home. The success, depends on the stupidity and indolence of the nation, that produces the raw material;—a precarious dependence, for the happiness and prosperity of a people. Add

to all these, the profit of the importer, which must come out of the pocket of the manufacturer.

A very slight acquaintance with commercial history, may convince us, of the precarious and transitory nature of manufactures, that depend on foreign countries, for their *prima*. *Venice*, and the other *Italian* states, carried on the woollen manufacture, when the rest of *Europe* remained ignorant and uncivilized; but, when other countries, that produced wool, began to manufacture their own materials, the *Italian* manufactures declined. The *Flemings* first perceived their advantages, for a commercial intercourse with the north of *Europe*; and, though they were without wool of their own, yet, being nearer, than the *Italians*, to the countries that produced it, particularly *England*, they were enabled to procure the raw material, on cheaper terms; and, in a short time, to undersell their rivals; and supersede them in the foreign market.*

The spirit of commerce began to develope itself in *England*, under *Henry the seventh*. His son and successor continued to protect, with all his power, the arts and commerce of the country; the same policy was adopted by *Elizabeth*, and the succeeding princes.—Detailed regulations were established, both, to prevent the degradation of the manufactures in wool, and to promote their advancement, to a state of perfection; and the exportation of the raw material, which for a long time had been the principal export of the country, was restrained by law. When the *English* began thus to direct their industry, to the manufacture of their own wool, they not only were soon able, to supply themselves, but gradually got possession of a great part of the foreign market. Thus, the *Flemings*, not having wool of their own, were unable to bear a competition, with the *English*, when they learned to work up their own raw materials; and lost the manufacture for which they had been so famous.

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* Wool was for several centuries, the principal and most valuable part of the *English* exports.

It is to be considered, that, in proportion, as the manufacture which imports its primum, flourishes, the demand for the raw material will encrease, and the venders of the latter will enhance their price.— Thus, the prosperity of a manufacture will bring with it a tax, on its own encrease. *Anderson** observes, that, when he wrote, Dutch flax was an hundred per cent. dearer in *Great Britain*, than it had been, twenty or thirty years before that period, when the linen manufactures of *England* and *Scotland* were in their infancy.

When the materials are of home production, the inhabitants being supplied with them, at inconsiderable expence, may make small essays of their skill, in manufacturing them; and being always certain of receiving a price from the merchant, proportionate to the value of their manufactures, they will be encouraged to go on in their attempts. They will produce goods, more and more valuable; and imperceptibly arrive at perfection. The legislature will have an additional inducement, to prefer the manufactures, which employ the raw materials of the country, if the country happens to produce any particular primum, in great abundance, or of distinguished excellence; such were antiently the *flax* and *papyrus* of *Egypt*, such the wool of *Spain*, and such are the wool and flax of *Ireland*.

Suppose equal capitals embarked in two manufactures; one of which operates on domestic, the other, on imported raw materials; the sum employed in the former, will, at all events, set in motion more productive labour, in the country, than that engaged in the latter; and the difference of the quantities of productive labour to be set in motion, will be proportioned, to the sum, which must be sent out of the country, for the first cost, and incident charges of the raw material with interest and a profit on that sum. But, this is not all, the manufacture

* *Letters on Scotland*, vol. 1st, page 36. Quere as to the truth of the statement in the extent he mentions?—But though the rise in price may not be so great, as he states, any rise in it, supports the argument.

nufacture which is converfant, about a domestic *primum*, replaces not only more quickly, but more certainly, whatever has been drawn, for its support, from the capital stock, of the society. Materials, produced on the spot, may be purchased, the moment they are produced. They may be purchased, fresh and fresh, as they are wanted. Thus, the money which is to be paid for them need not be idle, or unproductive a single moment, either in the hands of the manufacturer, who uses, the farmer, or other person, who grows, or in any manner produces the commodity, or of the third person, who perhaps negotiates between them, and carries on the business, of transporting the commodity from one place to another.

Indeed, the intervention of a third person, between the grower, or producer of a home material, and the manufacturer is frequently dispensed with. The case is far different, in regard to the foreign *primum*. It must, at all events, remain wholly inert, and unproductive, both on its passage, from the country, where it is produced, to the country where it is to be employed; and also, during the time it continues, in the warehouses of the exporting and importing merchants. Add to this, that it often happens, that foreign productions can only be purchased at certain times and seasons, as where there are great stated fairs and markets, for the commodity; in such case, it may be necessary for the importing merchant, to purchase the article, which he wants, a considerable time, before he has any opportunity of conveying it to the place of its destination. Here is an additional time, during which the commodity, or rather the value of it, to be deducted from the capital of the country, remains inert and unproductive. But this is not all; it is not merely, that a certain portion of the capital of the society, amounting to the first cost and incident charges, with interest and profits of the imported commodity, is kept in prison, and fails of setting in motion productive labour proportionable to its amount. There is yet another evil; the imported commodity, as I have observed, necessarily remains some time inert. During
this

this time, the importing merchant, who has advanced his money for the first cost, and incident charges, receives no return for it. On whom, then, does this loss of interest, for the period, fall? Not on the merchant;—for, in addition to the sum advanced by him, and a profit for his risk and trouble, he will enhance the price proportionably, and the manufacturer must have the commodity at any rate. The whole loss, therefore, of the interest for this period falls on the manufacturer, and operates for so much, as a further tax on his industry.

Anderfon observes, * “If the manufacture is of such a nature, as to admit of being carried on in separate, detached houses, in the country; and may be practised, by any single person, independent of others, it must invariably happen, that the whole of the money that is paid for the working up these foreign materials, flows directly into the hands of the lower ranks of people, often into those of young women and children, who becoming giddy and vain, usually lay out the greatest part of the money that is thus gained, in buying new clothes, and other gewgaws, that catch their idle fancies; and as these are almost always the produce of other countries, the greatest part of this money flows out of the country, again, by innumerable channels, almost as quickly as it arrives. So, that the benefit that results to the community in this case, is far from being so considerable as a superficial observer would, at first sight, imagine.” Thus, the industry employed in working up foreign materials, is too often a strenuous idleness, which, instead of replacing what has been advanced, from the capital of the society, for the purchase of the *primum*, occasions a constant drain of the circulating capital, for the purchase of foreign luxuries, particularly tea, sugar, and spirituous liquors. The foregoing observation of Anderfon, applies particularly to the silk manufacture, several branches of which, as, the winding, the making of lace, of ribbands, and other trimmings, are carried on by children and women, who too often employ their earnings in a manner, neither advantageous to themselves, nor profitable to the community.

* Letters on Scotland, Vol. 1st, page 38.

SECT. 5.

The Comparison of Manufactures with respect to the peculiar Circumstances of the Country continued.

It should be considered, whether a country has long exercised a manufacture, so as to have acquired, with superior skill, a considerable degree of attachment to it. Where a manufacture has long prevailed, and parents, from generation to generation, have been in the habits of training up their children, to the knowledge of their own art; it is natural for these people to become partial to what seems to have been a sort of hereditary possession in their families. Where a manufacture has been long established in a country, the people must mechanically, and imperceptibly, have acquired more than ordinary skill and dexterity in the different processes, and operations, so as to make their fabricks of superior excellence, and value. They may, even, by long experience, have discovered secrets, by which the process may be shortened, or the fabric rendered more perfect, in point of beauty, durability, or other essential requisites. It will be much better policy, to employ the capital of the country in arts, like these, which are already well understood, and have been successfully practised; and where the produced advantages are already known and ascertained; than, from a spirit of innovation; and on a calculation, probably fallacious, of superior gains, from a new manufacture, to withdraw the capital and labour of the country, from old established fabricks; and set the people, to learn, and exercise new manufactures.

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Much time and materials will be lost, in the establishment of a new manufacture. The undertaker will be discouraged ; (if his capital is small, wholly disabled ;) from the prosecution of his design, by those expensive trials, and probationary losses, that are incident to every new speculation. If, in the prosecution of his scheme, he depends on his own knowledge of the art, and ventures to employ unskilful or unexperienced workmen ; his views will be counteracted, his materials wasted and destroyed, by their ignorance and awkwardness. Perpetually thwarted and tormented, by their obstinacy and unskilfulness, he will relinquish the undertaking, in disgust.— Should he import skilful and experienced workmen, from the country where the manufacture is best understood ; he will be perpetually defrauded by them, or if this should not be the case, yet, he will be completely in their power, and subject to all their insolence, and exaction. He will fear to exasperate them, lest they should abandon him, after all his expence, in building storehouses, and workshops, erecting machinery, and providing materials. If, wearied out, with their turbulence and extortions, he should return to his original design ; and attempt to train young persons, in the art, who are as yet ignorant ; in this he will be opposed, by the malignity and jealousy of the old workmen ; and he will be driven, at the same time, to contend with the awkwardness and ignorance of the new. He will be discountenanced and discouraged, by the prejudices of the public, inseparable attendants on new undertakings. It will be long, before the workmen will acquire skill, celerity, and address, so, as to expedite their work, in the complete manner, that is necessary to cheapness, and consequently to the possession of a market ; and it will be yet longer, before the manufacture will have acquired the superior polish, and accurate manner of finishing, which bespeak the masterly workman, and are the result of innumerable essays, in the course of much time, and experience, forming the eye and hand of the manufacturer, to just precision, and neatness of execution. What I have said in the foregoing paragraphs is, on the supposition, that the capital of the country is inadequate to the support of the old, and the establishment of the new manufacture. In which case,

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as I have said, a decided preference is due to the tenant in possession, (so I may call the old manufacture) of the capital of the country.

Supposing even, that the manufacture should not have attained a full maturity and perfection, and yet should have taken root so generally, as to be, in some measure, familiar to the people at large; and to exhibit certain stamina, or even wild shoots, that serve to manifest a disposition in the inhabitants, towards that particular branch of manufacture; and to furnish certain seminal or vital principles, which are capable of being nurtured or ripened into an established manufacture. As, for example, where the country people generally manufacture linen cloth, however coarse, frizes, flannels, stockings, felts, though of inferior quality, and only for their own use; I would chuse rather to engraft a manufacture, on this parent stock, which I see shows life and vigour, than to run the hazard of introducing and planting a manufacture, which is wholly new and exotic. Just so it is, in the cultivation of plants; if we see them grow wild in the hedges, and flourish spontaneously in the fields; we may expect to cultivate them, with success, in the garden; and conclude, that they are indigenous to the country, or well adapted, at least, to the soil and climate.

Another point to be considered is, not only whether a country has acquired skill in a manufacture; but also, whether that skill is known and acknowledged; and the excellence of the country in any branch of manufacture, is clearly established, and so generally promulgated, that its productions are sought, with a preference, in the foreign market. This character, of superior quality in manufactures, is not always perfectly well founded. It must, indeed, be well founded at the outset, and can only be acquired by industry and superior skill. The character may subsist,
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* For instance, English serges bore a particular price, and were in superior estimation in the Dutch market. The criterion of the buyer is a particular manner of folding and packing. Great quantities of *Irisb* serges used to be sent to England; they were there new folded and packed, by the *English* factors, who received so much per cent for their trouble, and exported to the Dutch market, under the denomination of *English* serges. Something similar has been done in the making up of white linens for the Spanish market, a considerable house in *Dublin* dealt extensively in that way.

long after the excellence, by which it was first obtained, has become ideal, and a mere name. Whether well or ill founded, such a character is of the utmost importance, in the market; both, as to the rapidity of sale, and as to the prices, which the fabric will bring to the manufacturer. Fine white linens took their very denomination from *Holland*;—*Spanish* fire-arms;—*Norwich* crapes;—*Irish* poplins;—*French* black cloths. The denominations still remain; the superior excellence is probably become ideal. Where a country has once established a manufacturing character, of this decided kind, it should never lose sight of the fabric; it should hold it fast, it should grasp it, as a precious jewel, a national treasure.

There is another consideration, material in estimating the preference, which is due to one manufacture, in comparison with another. It may become a question, whether it would be wise, to divert the capital of a country, or any part of it, to the cultivation of manufactures, in which we are liable to an opposition from superior capital, and superior skill. Are we not bound (*ceteris paribus*) to give a preference to that, which brings with it least danger of rivalry, from richer or more industrious neighbours? Is one country to commit its own ignorance, poverty, sickness, and despondency, with the wealth, the skill, the perseverance, the established reputation, and the wakeful jealousy of another?—The people of this country are so much inferior to the *English* in point of capital, that they have little prospect of succeeding in any manufacture, where *England* shall oppose their progress. This must be particularly the case, in all manufactures, that are susceptible of much division, and subdivision of labour; or, which may require extensive works, and a costly apparatus of machinery. Large capital, also, comes to the market for the raw material, with superior advantages. As it is able to deal much more extensively, as well as to pay more punctually; it both gets the first choice of the *primum*, and gets it cheaper. So that, procuring the raw materials of a manufacture, of prime quality, and on better terms, than those which the country with a small capital pays for worse goods; the great will be able to under-
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derfell the small capital ; and will also drive it out of the foreign market, by the superior excellence of its fabrics.

It is to be observed, too, that superior capital is the parent of superior skill. A small capital will shrink from any loss. It will be intent only on an immediate return. It will not venture to make experiments. On the contrary, the manufacturer of large capital will extend his views ; he will not be deterred by present losses, he will make various experiments ; the consequence must be the greater perfection of his manufacture.

We must observe, also, that the larger the capital of the manufacturer, and more extensive his dealings are, the more moderate will he be, in his demands of profit. But the smaller the profits with which he contents himself, the better will he be enabled to undersell his competitors, in the market ; and he will be able to do this, in so great a degree, that, if any violent competition should arise, the manufacturer with the larger capital, will not only be able to undersell his rival, in the foreign mart, but will endeavour, and often with success endeavour, to dispossess him of his own home market ; partly, by giving longer credits ; partly, by underselling the manufacturers even at their own doors ; to effectuate which, these rich manufacturers will submit, without hesitation, to temporary losses, provided, that, by so doing, they may discourage and ruin their rivals.

This has been plainly seen in the pains, which the *English*, and *Scotch*, have taken, to introduce the cottons, the calicoes, the fustians, and other cotton fabrics of *Manchester*, the muslins, the gauzes, the kentings of *Paisley*. Even, under the considerable charges, to which imported muslins and calicoes are liable, the *British* contrive to undersell the manufacturers of *Ireland*, in their own market.

I do not lay it down, as an universal position ; that the fear of rivalry, ought, in every case, to deter a country from the prosecution of a particular manufacture. There may be some peculiar circumstances of the country, so favourable, as to counterbalance all the inconveniences of a rivalry. The utility of a manufacture may be so great, the demand for it so constant, or the profits accruing from it so large, that people are encouraged to persevere

severe in it, notwithstanding all the discouraging and baneful effects of a jealous competition. I say, merely, that, where we have rich and powerful rivals, the prospect of success in any manufacture becomes problematical, and the pursuit of it hazardous, and it may be prudent in us, to attach ourselves to other manufactures, where we may find less danger, of competition.

I would be understood to speak only of a competition, with superior capital, and superior skill, which give a decided superiority. There may be a degree of rivalry, which will be far from proving injurious. When the strength of two contending manufactures is fairly matched, the one is a check on the other; and the mutual jealousy only excludes supineness and fraud, the common effects of monopoly; and invigorates the exertions of industry, on both sides. When the manufacture of one country has no more chance in the contest, with the manufacture of another, than a small frigate, engaging a line of battle ship; is it not folly in the legislature of a country to prolong such a fruitless struggle, by the dint of bounties and protecting duties?

Manufactures must be considered, also, with regard to the reception, which, independent of rivalry, they are likely to find in foreign markets; and the return which they promise to bring, either in specie, in the raw materials of their own, or of other manufactures, or, in a quantity of the necessaries not produced in the country, which exercises the manufactures in question. Thus the people of *Lyon*, in contemplation of the Levant trade carried on extensively a peculiar branch of the woollen manufacture, adapted for composing the turbans of the *Islamites*.

CHAPTER III.

Certain Manufactures considered in Detail, with a reference to the natural and political Situation of Ireland.

Having laid down some general principles; it now remains, that I should apply them, by considering the principal manufactures of *Ireland*, in detail; and endeavouring to determine, which of them are best adapted, to the natural and political situation of the country.

SECT. I.

Of the Linen Manufacture.

The linen trade replaces three distinct capitals which had been employed, in productive labour; the capital of the farmer, who sowed the seed (supposing Irish flax seed was used,) and produced the flax; the capital of the master manufacturer, who employed a number of laborious hands on the *primum*, in its progress to the perfect state of a linen web at market, and the capital of the bleacher who finishes it for consumption, at the bleach green. In whatsoever point of view we consider *Ireland*; it will appear, that nature, her habits of industry, her peculiar circumstances, her political relations, all concur, in pointing out the linen manufacture, as the prime object of her exertions.

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A circumstance of peculiar excellence, in the linen manufacture, is its intimate connection with agriculture. It not only employs the people actually engaged, in the manufacture itself, but also, the husbandman in raising the *primum*, about which it is conversant. Much of good husbandry consists, in a certain rotation, or interchange of crops; one species of tillage prepares the ground, for the reception of another. Some productions exhaust, some ameliorate the land. A judicious farmer will consider this, and introduce a succession of crops. Among these, flax naturally takes its turn.

The cultivation of flax is attended with very considerable profit; * indeed, were it not so, we should not see it prevail so generally as it does, in every part of *Ireland*; but as it is a crop, which exhausts the land, it cannot uniformly be continued; other crops (of potatoes for instance) must be substituted; thus the cultivation of flax will lead to a general cultivation of land, and a production of the necessities of life, in abundance.

In addition to the great quantity of productive labour employed, in the operations of agriculture, to produce crops of flax, vast numbers, of women and children, are busied in gathering, and drying the flax, saving the seed, in steeping the flax to separate it from the oil, and dressing it, to prepare it for the wheel. The circumstance of employing women and children, who might otherwise be a helpless burden on the community, must particularly recommend any manufactures to the protection of the legislature.

The more we consider the linen manufacture of *Ireland*, the more we shall be convinced, that the industry of the country never ought to lose sight of it. Bounties and protecting duties, may enable other manufactures, to keep up a frail existence, and supply a part, perhaps, a small one, of the home consumption: They will never enable them,

VOL. IX.

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* Young makes the average expence for rent, labour, and seed, of cultivating an acre of flax, £8. 15s. 2d. and the average value of the crop he makes £15. 8s. 1d.—So the net average profit of the husbandman is near £7.

to gain possession of the foreign market, with the effect and eclat, that attend our linens. The present astonishing prosperity of the linen manufacture should encourage our perseverance, in this branch of industry.

The legislature has, no doubt, exerted itself, in an uncommon degree, and through a long period of time, for the protection of the linen manufacture. Large sums of public money have been expended on bounties and premiums for its improvement; and on the distribution of wheels, and other utensils, for the encouragement of industry. It has endeavoured to bring the manufacture to perfection, and to give it a reputation in the foreign market, by salutary regulations to prevent and punish frauds, and enforce a fair and workmanlike manner of making up the different linen fabricks. It has appointed active inspectors to superintend the observance of those regulations; and it has given a credit and authenticity to the manufacture in every market, by affixing a seal or stamp to each piece, as a test of its having been duly manufactured, and an assurance of its being free from defect in quantity or quality. This public expence, and public care, have produced abundant fruit, and fully answered the benevolent purposes of the legislature.

To shew the vast importance of the linen manufacture, I shall state an extract from the public accounts of Ireland. They make the average yearly value of linen cloth and yarn exported from *Ireland* during thirty years, beginning with the year 1748, and ending with the year 1778, £ 1,228,148—they make the average yearly quantity of linen cloth exported from this country during seven years, ending with the year 1777—20,252,239 yards. They make the average yearly quantity of yarn exported during the same period, 31,475; Cwt. and during those periods the manufacture was almost entirely confined to the province of Ulster.

I have laid it down as a principle, that a manufacture is entitled to distinguished preference, which may be fabricated wholly, or for the most part from domestic materials. This praise is peculiarly due to the linen manufacture. If we except the money, which goes out of the country for flax seed; (great part, or all, of which, might be retained at home, if the
farmers

farmers would apply themselves to raise flax for the seed) and some of the articles necessary for bleaching, for which, also, equivalents might be found in the country;* all the money advanced from the capital of the society, to set in motion the linen manufacture, circulates within the society itself. From the very moment of the seed being first put into the ground, to the very time of its being exhibited in the market, (after its passing through innumerable hands, and undergoing various operations, and multiplied changes,) in the form of a piece of white linen, every thing is the native growth of the soil, every thing the productive labour of the inhabitants of the country.

The linen manufacture possesses another excellence; it carries the productive labour of the workman to the highest pitch of value. The acquired, or artificial, value, which the skill and exertion of the manufacturer bestow, in the progress of the manufacture, is greater, in proportion to the intrinsic value of the raw materials in the linen manufacture, than in most others. The same parcel of flax may be made into a piece of common linen, worth two shillings the yard, or into a piece of cambric of twelve times the value; merely, by different exertions of the spinners and the weavers. Where a manufacture, being capable of such progressive excellence, offers superior advantages to superior industry and skill; good policy points it out, as an object deserving peculiar encouragement.

It is to be considered, that, the fountain head of power, and the seat of imperial government are fixed in *Britain*. Superior wealth, more forward civilization, more advanced knowledge; all these concur to give the neighbour country such decided advantages, as leave to *Ireland* small hopes of success, in a struggle for a share of those manufactures, which *England*, may wish to reserve to herself. Fortunately, by the compact which took place, when the woollen manufacture was proscribed in this country, the linen manufacture was not only suffered, but encouraged to grow and encrease; and now, it has taken such deep root,

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* By a due attention to modern improvements in chemistry, it is probable we might supply ourselves with bleaching materials.

and attained to such vigour, that it is not in the power of *England*, were it in her will, to shake its stability. As to the linen manufactures of *England*, or *Scotland*, they do not seem to be such favourite objects of industrious exertion as some others; and were they to become such, we have already so far outstript the neighbour countries, in this walk, that it will be impossible for them to overtake us. The linen manufacture, therefore, is the only one, in which we stand wholly clear of the rivalry of *Britain*.

As to the rivalry of the *Dutch*, the *Flemings*, and *French*, they may surpass us in the more elaborate, or costly linen fabricks; damask table linen, lawns, and cambrics; to which we may add, fine thread laces, the manufacture of which they possess almost exclusively. They cannot come into competition with us, as to that kind of fine white linen, which is adapted to common use, as a part of wearing apparel, and is, indeed, an absolute necessary of life, to all people in the superior, and even in the middle ranks of life, in most parts of the world. As to delicacy of texture, and dazzling whiteness of hue, the fine linens of *Ireland* stand unrivalled. The people of France, and of the Netherlands, manufacture linens firm and durable, but they fall short of the *Irish* linens, as I have said, in beauty. The northern parts of *Germany* may perhaps excel, in the manufacture of sail cloth, and of other coarse linens, that may be equal if not preferable to those of *Ireland* for particular purposes.—The sheeting of soldiers and sailors, the trowsers of the latter, tents, the shirts and jackets of negro slaves;—but these linens are of too coarse and harsh a texture, to enter into competition with those of *Ireland*, as to the purpose of their being worn about the persons of the delicate, and opulent. The number of streams and rivers in *Ireland* are peculiarly favourable to the linen manufacture, in many respects. In the first place, all flax abounds in a certain oil, which, if it were suffered to remain in it, would always render the thread of a dark dusky hue, and make it impossible to bleach it. And this oil abounds most in flax of the best quality: an access to water, therefore, is necessary to prepare flax, before it can be manufactured; for it is only by maceration in water that it can be separated from
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its oil. But in this respect *Ireland* is particularly favoured by nature. Scarce a farm, scarce a field is destitute of water. The number of streams, and the command of water are favourable also to the establishment of bleach greens, and the erection of mills and machinery, for the purpose of finishing the linen fabricks.

I have already remarked, that the atmosphere of *Ireland* is considerably moister than that of *Britain*, and of most other countries; and that more rain falls in this island, than in most other places. These circumstances may render the climate of this country less pleasurable,—perhaps, less apt, for the perfection of certain manufactures; but they are certainly favourable to the linen manufacture. The moisture of the air, in general; the heavy dews, and frequent showers must very considerably facilitate the process of bleaching. Linen is so necessary an article of wearing apparel; its lightness, its soft, and smooth texture, its durability, its property of bearing to be washed incessantly, while it lasts, without undergoing any very perceptible change in its dimensions, or other properties.—All these qualities render it peculiarly fit for under garments.

That linen has been an article, not only of luxury, but of comfort, from the oldest time appears from the History of Commerce. We know in what esteem the fine linens of *Egypt* were held. At the revival of commerce the linens of *Holland* and *Flanders*, were in equal repute; and the fine linens of *Ireland*, at present, are not inferior in repute or demand. The linen manufacture, therefore, is one which can never decline, or be subject to the caprice and vicissitudes of fashion. The demand, it is true, may vary* in some degree, from the influence of war, and other causes. For instance, a rupture with Spain, which now takes a large quantity of our linens, both for home consumption, and for the use of her colonies, would occasion a considerable decrease in the export of our linens. Yet the home consumption, the *English* market, the extensive continent of *North America*, which now affords a large and regular demand for our linens; the direct exportation from this country to the *British* colonies in the *West Indies*; all these united must produce such

* At present it is to be lamented that the linen manufacture seems rather to have declined.

an extensive circulation, as scarcely any other single manufacture ever did, or now can boast, and, notwithstanding some slight variations, must maintain the linen trade of *Ireland*, in a state of unexampled prosperity.

I cannot subscribe to an observation, which I find adopted by the late ingenious Dr. Crump; from Mr. Hutchesons pamphlet, on the *commercial restraints of Ireland*.—He reprobates the idea of making the linen manufacture general, throughout this kingdom, and lays it down, as an axiom, that no populous and commercial country, ever subsisted on one manufacture alone.—The example of ancient *Egypt*, should lead us, to question the soundness of this maxim. *Egypt* carried on but one manufacture, that of fine linen, with which she supplied the whole world, in those days; or if we should think that of *Papyrus*, sufficiently important to be taken into account; she subsisted on two manufactures, and no more, in addition to her agriculture; and subsisted in great wealth, strength, and glory. It may be doubted, indeed, whether *Egypt* was strictly a commercial country, as she did not export her own productions, the *Egyptians* having a superstitious abhorrence of the sea, but *Egypt* was certainly a most flourishing and populous country, and carried on a great export of her productions, in foreign bottoms. I think therefore, her example sufficient, to prove the assertion ill founded. I am apt to think that *Ireland* by the fertility of her soil, and the bent and habits of industry now settled in her people; is not only qualified, but *inclined to become the Egypt, of modern commerce*.—The linen manufacture is making a rapid progress in the province of Connaught; in one county—Mayo,—there are already three great linen marts, namely, Westport, Castlebar, and Ballinrobe.—In Munster, great quantities of coarse linens are made.—So far was the legislature of *Ireland* from acting on such ideas, as influenced these writers, that they have endeavoured, to diffuse the linen manufacture, as widely as possible, and establish it generally throughout the kingdom—for this purpose a law* passed; “that when a convenient piece of ground could be procured, in the shire or county town, of any county, in the provinces of Leinster, Munster,

* 19. Geo. 2d. cap 6, § 32.

“ Munster, and Connaught, and should be duly assigned, or conveyed, with one approbation of the grand jury, for that county; such grand jury, may then present money for building a public ware-house, or market-house, in which flax, or hemp, or flaxen, or hempen yarn, may be lodged, and exposed to sale; and also the sums in question are appointed, to be levied from the county.” Their amount* might prove inadequate to the end proposed, but the law serves to show the sentiments of the legislature. There is another clause†, in the same statute, equally expressive of their opinion; by it—“ no toll, custom, or duty, shall be paid for linen, or hempen cloth, linen or hempen yarn, hemp seed, flax seed, hemp, flax, potash, looms, wheels, or hatchels, for, or by reason of their being brought to any market, or fair, or by reason of their passing over any bridge, or thro’ any town, or place, turn-pike gates excepted.” Indeed, the fertility of soil in many parts of Munster, and Connaught, and the advantage of excellent harbours for the exportation of the manufactured fabrics seem, to point out these provinces for the favourite abodes of this great, and most improveable manufacture.

It is to be observed, that the position of *Ireland*, in the map of the world, is such, as should lead her, to an intercourse, with *Spain*, *America*, and the *West-Indies*: and in fact, such an intercourse prevails, *Ireland*, therefore, should apply herself to the production of such commodities, as will the most readily find a sale, in those countries; in which point of view the linen manufacture, thro’ its different members clearly holds the first place.

Ireland, has been near a century, in the habits of carrying on the linen manufacture, thro’ its various branches; she has acquired consummate skill in its different operations, established an high character,‡ for the excellence of her productions, and is in possession of great regular markets

* £500 for building the market-house, £15 per annum for the salary of the officer.

† § 37.

‡ Some late injudicious experiments in bleaching have somewhat shaken it.

markets, for the sale of them. *Ireland* being most auspiciously circumstanced in these respects; it should be her study, to maintain herself in such golden advantages, by uniform exertions of industry and care. She should beware of deserting or even cramping a manufacture so firmly established, and endowed with such capabilities; for airy and problematical speculations.

I shall conclude this section, with a quotation, from Sir William Temple.*

“ The soil produces flax, kindly and well; and fine too, answerable to the care used in the choice of seed, and exercise of husbandry, and much land is fit for it here, which is not so for corn. The manufacture of it, in gathering and beating, is of *little toil and application*; and so the *fitter for the natives of the country*. Besides, no women are apter to spin it well, than the *Irish*, who, labouring little, in any kind, with their hands, have their fingers more supple and soft, than other women of the poorer condition among us. And this may certainly be advanced, into a great manufacture of linen, so as to beat down the trade of both *France* and *Holland*, and draw much of the money, which goes from *England* to those parts, on this occasion, into the hands of his majesty’s subjects of *Ireland*, without crossing any interest of *England*; for, besides what has been said of flax and spinning, the soil and climate are proper for whitening, both, by the frequency of brooks, and also of winds in this country.”

Notwithstanding the great degree of importance which is justly ascribed to the linen manufacture, its universality and value are not, even now, appreciated as highly, as they deserve. I have heard it asserted, —I have seen the assertion in print, that the linen manufacture is confined to one province—*Ulster*,—or, at least, is cultivated to a very trifling degree, in other parts of the kingdom. This is a very gross mistake—for instance, the linen manufacture is greatly extended, and flourishes in a very high degree, in the province of *Connaught*, where it may

* See the octavo edition of his works, vol. 3, page 14.

may now be considered as completely established, since in that province there are now three great regular markets for unbleached linens, and many considerable bleach-greens. In *Munster*, too, the linen manufacture is very generally prosecuted, and great quantities of flax are raised. —Almost every farmer manufactures linen, for his own consumption, and large quantities of coarse linen are constantly to be seen for sale in every market-town. In the county of *Kerry*, in particular, there is a great and general manufacture of that species of coarse linen, called *dowlafs*, and large quantities are exported thence to *Lisbon*, from the port of *Dingle*.—The linen of this description made in *Munster*, is vastly superior in quality, to that which is produced in the *North of Ireland*, because as it is said, in the latter province they employ only the refuse of their flax, in the coarser fabrics; whereas the contrary is the practice in *Munster*.

SECT. 2.

Of the woollen manufacture.

It has been proved in an interesting essay, by the excellent President of this academy,* that *Ireland* was possessed of an extensive trade, and had arrived at great excellence, in woollen fabrics, at a very early period; and long before this manufacture became an article of export, from *England*. Indeed, the nature of the soil and the climate of *Ireland*, are peculiarly adapted, to the woollen manufacture. The fine herbage of her sheep-walks, her mild winters, and moderate summers, tempered by breezes, from the sea, are calculated to produce wool of the very best quality, and formerly *Ireland* produced great quantities of excellent wool, though the quantity of Irish wool is now small, and the quality deteriorated.

The maintenance of sheep has one advantage, over most other species of farming, that, while the wool, and flesh of this useful animal afford

VOL. IX.

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* This Essay was written, while the late lamented Earl of *Charlemont* was living, and President of the Royal Irish Academy.

an immediate return of profit, there is no more speedy or effectual means of ameliorating a poor and barren soil, than the depasturing it with sheep—The dung of sheep is esteemed a more fertilizing manure than that of any other domestic animal, so that if they be folded in proper places, in the neighbourhood of their pasture ground, these spots will be so much enriched, as to be capable of producing abundant crops of grain; and if these spots are laid down to grafs again, before they are too much exhausted, they will ever after continue to carry more grafs than formerly. This would render the same field capable of nourishing an additional number of sheep, which would yield a proportionably greater quantity of manure, and so the improvement of the soil might go forward *in infinitum*. Nor are the improvements of this kind of husbandry confined to arable land; the mountainous country, that does not admit tillage, experiences it, and land thus improved, ever after produces more grafs.

The most mountainous part of *Ireland* will maintain sheep. Many districts, particularly the counties of *Wicklow* and *Kerry*, and considerable parts of the counties of *Clare* and *Galway*, are particularly fitted for breeding and nourishing large flocks of sheep. In fact, a great part of the land of *Ireland* would make excellent sheep-walk, were it not in many places more profitably employed. Add to this, that the mildness of the climate renders it unnecessary to house the sheep in winter. From these concurring causes, it results, that *Ireland* produces* the primum of the woollen manufacture of the most excellent quality, in the greatest abundance. In such high estimation was the wool of *Ireland*, and so productive was the country, of this valuable commodity, that, during a long period of time, notwithstanding the most strict and prohibitory laws, and the utmost vigilance of government, vast quantities of Irish wool were constantly exported to *France*, by stealth, and ample fortunes

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* Or may produce. I have heard it asserted, that the number of sheep, in *Ireland*, is much diminished, and I believe the fact to be so.

were accumulated, particularly in the western parts of *Ireland*, by that illicit commerce.

In addition to these advantages of soil and climate, every part of this island abounds in rivers and streams. These not only facilitate the operations of washing the sheep, and cleansing their fleeces; but also the erection of fulling-mills, and other machinery, worked by water, necessary in the business of a clothier. Not to mention that there are other processes, in the course of the manufacture, which require a command of water, *Ireland* would, with proper cultivation, produce those vegetable substances—woad and madder, which are chiefly used in dying woollens, particularly the cheaper fabrics; and the number of cattle slaughtered in this country, is so great, that the wool-comber is constantly supplied with abundance of animal oil, so necessary to his part as the manufacture. We are also assured by naturalists, who have explored the mineral productions of *Ireland*, that it produces fuller's earth, and pipe-clay, were the industry of the inhabitants properly exerted, to obtain those useful substances.

The woollen manufacture is one (if we except the finest kinds of cloth, manufactured either wholly, or for the most part of Spanish wool,) in which the primum, at least in the numerous branches, which do not require dye-stuffs, is entirely of domestic growth; and, on this account, it is entitled to a preference over others, that import their prima; particularly in a poor country, like *Ireland*.

Another advantage of the woollen manufacture is, that it admits a division of labour almost infinite. It is also applicable to an endless variety of purposes; it assumes a boundless variety of forms, and branches out into a boundless diversity of trades, employing multitudes of people, and among these a great proportion of women and children.

Another advantage of the woollen manufacture is, that it gives great scope to the industry and skill of the workman, and is capable of great progressive excellence; so that the value of the finished fabric, in proportion to the first cost of the raw materials, may be rendered greater,

in the woollen, than in most other manufactures. It is also applicable to so many different purposes of life, assumes such a variety of forms, as I have said, and puts forth so many different ramifications from each of its branches, that there is endless scope for the inventive genius and skill, of the intelligent workman.

The different kinds of excellence, at which the woollen manufacture may aim, are almost as varied and numerous as the branches of the manufacture.—Softness—lightness—warmth—firmness of texture—durability—brilliancy of dye—according to the various purposes, for which the manufacture is intended. A philosophic observer will be struck with astonishment and delight, when he considers the woollen manufacture; for there is none, in which the ingenuity of the commercial spirit, in which the triumphant industry of man appears so conspicuous.

The woollen manufacture, though it sometimes sacrifices to fashion, and ministers to vanity, deals, for the most part, in articles of the first necessity; indispensable requisites of wearing apparel for both sexes, of household furniture, as blankets, carpets, curtains, hangings, and many other things, the linings and trimmings of carriages; such things, as in every part of the world, in all changes of times, and variations in the manners of men, must be in universal demand,

The boundless capabilities and incalculable value of this manufacture appear, from what it has effectuated in *England* and *France*: and the jealous solicitude of the former country, to engross it to herself, was such that she considered it as a more valuable object, in itself, than the linen manufacture, as may be collected, from the address of the English House of Commons, on the subject, to King *William*; and from her fostering *Ireland* to retain possession of the latter manufacture, by compact. To the beneficial effects of this manufacture, we may chiefly attribute the prosperous situation of *Ireland*, at the time of the revolution, and for some years after; which was such, that in the year 1698, the balance of import and export was 419,442*l.* in favour of *Ireland*—a great sum in those days!

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* See the able and useful pamphlet of the late Provost *Hutchinson*, on the commercial restraints of *Ireland*.

The prohibitory laws* of William the Third, were meant to give a death wound, to the woollen manufacture of *Ireland*; and nearly accomplished the cruel and mistaken purpose. The keenest misery overwhelmed the land; numbers of its most useful inhabitants were at one stroke, deprived of the means of subsistence; and left, to perish by famine; or rescue themselves from that sad destiny, by voluntary exile. It is observed, that the history of no fruitful country, enjoying peace, and not visited by pestilence and famine, during eighty years, can produce so many instances of wretchedness, as appeared in *Ireland*, during a period of that length, which succeeded the proscription of her woollen trade. During this whole time, *England*, with a full possession of the monopoly, combined all the exertions of superior capital, and superior skill. The deliberate and continued injuries of *Britain* at length roused the suffering nation; and the commercial restraints of *Ireland* were removed; but the cordial, as far as respected the woollen manufacture, nearly came too late, the patient, exhausted under a series of cruelties, merely struggled for a sickly and precarious existence.

Yet, though such pains were taken, with a jealous and murderous severity, and that during most part of the present century, to eradicate the woollen manufacture of this country; it had taken such deep root, that some stocks and suckers are every where to be found; and serve at once, to show its past flourishing state, and give hopes of its renovation. Branches of the woollen manufacture, some, more rude, some more perfect—woollen yarn, frizes—flannels—rugs—blankets—serges—hose—felts—carpets are fabricated, in various degrees, in most parts of the island; some of them to a large amount, and the people are generally initiated in the rudiments of those arts, that operate on wool. There are parts of *Ireland*, in which this manufacture must be considered

* An act 10 and 11 William 3d, Sess. c. 10—3d Geo. 1, c. 21—4 Geo. 1 c. 11. 6 Geo. c. 21. 5 Geo. 2 c. 21 —making it penal to export any wool or woollen drapery from *Ireland*, to any place except *England*; or to put the same in any vessel, with an intent to export them; and enforcing these restrictions, by a variety of penalties and regulations.

dered as in a thriving state. *Kilkenny* produces a considerable quantity of blankets, and this manufacture might be extended to such a degree, as to supersede the necessity of importation. The carpets of a coarser kind made in *Ireland* (and the quantity is very considerable, particularly in *Dublin* and *Cork*) are much superior, in quality to those of the same kind, which are fabricated in *Scotland*. The town of *Carriick-on-Suir* carries on the clothing branch of the woollen business, with some spirit; a good deal is done, in the same branch, both in the city of *Cork*, and in other parts of that county; and I have seen specimens of superfine cloths produced by manufacturers in *Ireland*, not inferior to those of *England*. The manufactures of flannel, and other coarse fabrics, which are wholly composed of native wool, are in a most flourishing state in the county of *Wicklow*, and the woollen market of *Rathdrum* is already become a regular and well established mart.*

Where rural and domestic manufactures of any fabric become general, through a country; they diffuse a knowledge of the art, and serve as a kind of schools, in which the people are trained up, in the rudiments of the manufacture. {This renders it much more easy to form large establishments, for the production of the fabrics in question. The village and agricultural artisans acquire such a knowledge of the trade, as, at least, fits them to receive the instructions of the finished master manufacturer, with profit, and such a competent degree of skill, that the wholesale employer may venture, to entrust them with his materials, without incurring the danger of their being spoiled. Such is the present state of the woollen manufacture in this country. I think, therefore, that although it is far, very far, from being at present, what we may call, on the whole, a flourishing manufacture, it must be considered,

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* In speaking of the county of *Wicklow*, it would be injustice to pass over the exertions of the *Allens*, who have established in that county a manufactory, which employs a vast number of persons, and promises to vie with the great undertakings of a similar kind in *England*. The reader will readily perceive, that the whole of this Essay was written long previous, to the late lamentable disturbances, which convulsed this country.—What *Ireland* may hereafter become, it is hard to say.

in the light of a manufacture well established in the country ; and in which the people have acquired competent skill, from their having exercised it a long time. Strong motives these, to induce the legislature to view it with favourable eyes, and bestow on it some portion of their care, and some degree of encouragement.

It must not be concealed, however, that the woollen manufacture labours under serious disadvantages ; and has formidable difficulties to encounter, in its progress to perfection and prosperity. It has been deprived of its reputation, that immediate jewel of a manufacture, as well as of a mind. It has been cast down, from its station of eminence, and no longer possesses that good name, which is such an imposing passport to the foreign mart ; and now the powerful rivalry of *France* and *England* make it very difficult, for the woollens of *Ireland* to find a place in the markets, which are preoccupied by the superior skill and capital of the neighbouring countries.*

The want of capital in *Ireland*, is a dead weight, that hangs on the woollen manufacture, as well as on many others, and retards all advances to improvement and prosperity. The finer branches of this manufacture require large store-houses, extensive tenter-fields, great ranges of buildings, for the different operations of the manufacture—workshops—drying lofts—dying houses—vast quantities of materials must be accumulated, a variety of complete and expensive machinery must be erected. To provide all establishments on such a large scale, as alone makes a manufacture profitable, a considerable capital is requisite. Add to this, that the important and costly materials, Spanish wool, and dye-stuffs are had at the worst hand.

The want of fuel, which prevails in many parts of *Ireland*, must operate, to prevent this manufacture from becoming as general, as it might otherwise prove ; both by rendering the country less populous in the districts, which labour under this inconvenience ; and by the increase of expence, which it necessarily induces, in several processes, as
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* Notwithstanding the distracted state of *France*, the woollen manufactures at *Abbeville* and elsewhere, are said to be in a flourishing state.

the dying, the pressing, &c. of the woollen fabricks, for which a considerable application of fire is necessary.

But the grand disadvantage is the superior price and scarcity of wool in this country, and the present inferior quality of the Irish fleece, to whatever cause we must ascribe the change. *Young*, in his tour makes the average price of wool in *Ireland* 13s. 8d. while its average price in *England* is but 9s. 3d. the stone; a difference of 47 per cent. What an influence this must have on the price of the manufacture is obvious. In fact, it is such an advantage, in favour of the *English* manufacturer, as must nearly if not fully countervail those, which the artisans of *Ireland* enjoy, in the cheapness of provisions, and lightness of taxes. But still worse, our wool is not now fit for the manufacture of broad-cloths.*

Another disadvantage under which *Ireland* labours, is a deplorable deficiency, in many branches of useful knowledge, which might be made subservient to the prosperity of the woollen manufacture. The science of mechanics is in an imperfect state here, compared with what it is in *England*. Chemistry is little studied, and its principles are known to few in this country; yet both these parts of science may be employed to the most important purposes, in the woollen manufacture; by the application of the mechanic powers in machinery; and by improving the art of dying, through an examination of colours, their properties and effects.

* Yet *Ireland* is fitted by nature, to produce excellent wool. The scarcity of the commodity may be explained, from the great quantity of sheep-walk now turned into tillage; the bad quality of the wool, from inattention or error in the breeders of sheep, who consider the shambles, not the workshop.

SECT. 3.

Of the Cotton Manufacture.

I come now to the cotton manufacture, which has already obtained considerable footing in *Ireland*; and employs a large portion of productive capital, and useful industry. The astonishing progress of the cotton manufacture is partly to be ascribed, to a great and general revolution of fashion in the furniture of houses, and the wearing apparel of persons of both sexes, which has substituted the light, cheap, and elegant fabrics of this manufacture, for the more costly and cumbersome trappings of silk and woollen-velvets, sattins, the silk damask, and heavy flowered silks, for wearing apparel, velvets, silk, and stuff damasks, paragon and morine for furniture, which were formerly in universal use.

The progress of this manufacture in *Great Britain* is something almost miraculous.* In the year 1768, the cotton trade of that island did not return to the country more than 200,000*l.* for the raw materials, combined with the labour of the people; and at that period, and before the introduction of water-machines, and hand-engines, the power of the single wheel did not exceed 50,000 spindles employed, in spinning the cotton wool into yarn. In a little more than twenty years, from that period, the power of spindles thus employed exceeded two millions, the gross returns, for the raw materials and labour exceeded seven millions.

It was about the year 1784, that the expiration of Sir Richard Arkwright's patent caused the establishment of water-machines, for the

VOL. IX.

(H h)

spinning

* See Aikin's history of *Manchester*, and a pamphlet on the subject, written in the year 1787. Since that year its population is much increased, and the number of engines is daily increasing.

spinning of cotton warps, in all parts of the country ; with which the hand-engines for the spinning of weft, have kept proportion. In the year 1788, an accurate writer, who considered this subject, stated the machines employed in this manufacture as follows.

Water-mills or machines,	-	-	-	-	-	143
Mule-jennies or machines of 90 spindles each	-	-	-	-	-	550
Hand-jennies of 80 spindles each,	-	-	-	-	-	20,070

Of the water-machines 124 were in England, 19 in Scotland, those in England were disposed thus—

Lancashire	41	Cheshire	8
Derbyshire	22	Staffordshire	7
Nottinghamshire	17	Westmorland	5
Yorkshire	11	Flintshire	3

These establishments, when in full work, are estimated, to give employment to 26,000 men, 31,000 women, and 53,000 children ; and in all the subsequent stages of this manufacture, the number of persons employed is estimated, at 133,000 men, 59,000 women, and 48,000 children ; being an aggregate of 159,000 men, 90,000 women, and 101,000 children, in all 350,000 persons employed in this manufacture ! who manufacture twenty-two millions of pounds weight of the raw material !*

Thus, in twenty years 200,000*l.* becomes seven millions, and 50,000 spindles employed in the manufacture become two millions. Such are the magic effects of industry, and such the wonderful progress of the cotton manufacture. In *Ireland*, its progress has been less rapid, in proportion to the capabilities of this manufacture ; yet, much has been done ; and fair hopes of success, in this branch of industry, may be entertained, and the legislature of the country has shown a laudable solicitude to encourage and protect, in the infancy, the cotton fabrics of the country. Though the first attempts in this department were less successful, than might be wished and expected ; they have received the support and encouragement of the legislature, which has endeavoured

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* It must be recollected, too, how many years ago this calculation was made, and the manufacture has increased wonderfully since.

to secure to the cotton manufactures of the country the possession, at least of our own home market, by duties imposed on the importation of all muslins and calicoes, except of the manufacture of *Britain*, and a duty of one shilling per yard on calicoes painted or stained, without exception.*

It may be proper, with respect to the cotton manufacture, to state the disadvantages, under which it labours, and indeed must continue to labour, in this country; as I have done with respect to the woollen manufacture.—The *primum* of this manufacture is not only the produce of foreign regions, but all those regions are far remote—the *Levant*—the *West Indies*—*South America*. This, in the very first instance, adds a considerable charge for carriage, to the first cost of the commodity. In addition to its being the growth of distant countries, cotton is an article of very great bulk, it requires a vast deal of room for stowage, a circumstance that still further enhances the price of freight, and storage. To crown all, the first cost of cotton, on the spot where it is produced, is very considerable; so that when this comes to be added to the freight, and all the other expences incident to the importation, together with the profit of the merchant importer;—a very large sum, (most part of which goes out of the country, often to return no more) is drawn from the manufacturer, for the raw materials of his art; before he can set his people to work.

The supply of *primum* depending on such distant regions, must become very precarious, in the event of a foreign war. The charges of insurance and increased price of freight will, at any rate, injure the prosperity of the manufacture; by rendering the *primum* both scarce and dear; but if the supply, by the capture of ships, or their being prevented from sailing by the enemies' cruisers, should totally fail; a numerous body of workmen will be entirely thrown out of employment, and left with their families, a prey to famine.

It may be objected to the cotton manufacture, that most of its branches minister almost entirely to luxury, either in finery or furni-

(H h 2)

ture;

* It must be remembered all along that this tract was written long prior to the Union of this country with *Great Britain*.

ture; and that there are few of its fabricks, which may not be spared from common use, without much inconvenience, or for which a sufficient succedaneum may not be found, in the productions of some other manufacture*. This manufacture also, is very much under the dominion of fashion, and perpetually varying. It was only introduced of late years, since, by the help of *Arkwright's* inventions, the *British* workmen were enabled, to make cotton warps, and manufacture muslins, and fine calicoes. It has now become the chief compotent part of the dress of females; and an important part of dress, to men, who study that object, with a female care. But, as the cotton manufacture arose on the ruins of the silk manufacture, which after being equally predominant for a time, was superseded by it; the now exploded silk manufacture, may again revive; and assume the sway, to the exclusion of cotton fabricks.

The cotton manufacture is but ill calculated, for the meridian of a poor country; not only, by reason, but its producing chiefly manufactures of luxury; but also, on account of the large capital, which is requisite, to the extensive and effectual prosecution of it; the raw material being a commodity of great price, and brought from far; the country or individual, which possesses the best capital, will be able to procure it, of the best quality, and on the best terms; but the grand expence is in the creation of machinery, and the establishment of the necessary apparatus, for making and finishing the various fabricks of cotton; and this is so heavy, as should deter any person of moderate means, from attempting this manufacture.

This is a manufacture, which *Great Britain*, has wrought up to the utmost perfection. She has laid out the national energies upon it; much of her productive capital is embarked in it, and she views it, with a partial fondness, the consequence of success. Here, therefore, we must expect to encounter from *Britain*, the whole force of her rivalry, aided by all the advantages,

* Either of fine linen or woollen, which would produce fabricks, equally convenient for Men, and Women's wear, and House furniture.

advantages, that superior capital, and superior skill can add, on our part.— We have nothing, but the lightness of taxes, the comparative cheapness of provisions, and a country abounding in streams, and favourable to the creation of machinery. A country with superior capital, will find various means, of supplanting her rival, in the market,—by the activity, and industry of her agents, by giving long credits, to the foreign merchants, that import, or shop-keepers, that vend the fabricks, in question; and even, by selling her manufactured goods, for a time, at a certain loss, if the former measure, should prove insufficient. Should the legislature of the country, which suffers by these measures attempt to traverse them, by the imposition of protecting duties, and even by enactment of prohibitory clauses; they will endeavour, to disarm the laws of their force, and withdraw their fabricks from their operation, by some change in the form, and denomination. Thus, for instance, the *British* manufacturers contended that *Ginghams** were not included in the act, imposing a duty on calicoes printed, or stained. They may enter them under wrong denominations, to avoid the payment of higher duties; or they may violate these laws altogether, and introduce their manufactures, by the illicit method of smuggling†.

To give some idea of the difficulties, which our cotton manufactures must encounter, from the powerful rivalry of *Britain*; it is sufficient to mention that

* *Ginghams*, are a striped fabrick, and the colours are given to the yarn before it is woven, on which pretence, it was contended that they were not included in the description of calicoes *printed*, or *stained*, where the colours are supposed to be given to the piece after it is woven. This quibble was overruled at the custom-house. *Corderoys*, and other fabricks of that kind were entered as fustians, on the duty assigned in the book of rates, but being seized as for a false entry; the owners of the goods brought an action at law; there was a judicial determination in favour of the seizure, and such goods have since paid a duty *ad valorem*. In like manner the cotton manufacture of thread, which is employed in making stockings, and is called hosiery's twist, was attempted to be entered as cotton yarn, on the duty fixed for that article in the book of rates, but this attempt failed, and the commodity pays a duty *ad valorem*. I mention these instances to show how artful and industrious, the *British* manufacturer and their agents are to take every advantage in the introduction of their fabricks into this country.

† Some late curious accounts of the great fair of Leipzig, which may be found in the Monthly Magazine, will serve to give some idea of the extraordinary activity and ability of the *British* manufacturers.

that though cotton weft, and warp for weaver's use, were liable to a duty of about two pence per pound, on importation into *Ireland*, as cotton yarn, under which denomination, a right of entering cotton warps* had been established, the *English* manufacturer paid this duty, together with the charges of freight, carriage, storage, and factorage; and notwithstanding all this, underfold the *Irish* manufacturers and proprietors of machinery, in their own market†. We are not to suppose, however, that the *English* manufacturers have obtained this decided superiority, without great exertions of industry and

* A small parcel of cotton warp was seized; for the expressed purpose of trying the question, whether the commodity, ought to pay duty *ad valorem*, or should be admitted to entry, as cotton yarn, on payment of a duty of about two pence per pound, under the old book of rates. It was contended, by the *Irish* manufacturers, and the officers of the customs, that the book of rates was made near a century and half ago, when no cotton yarn was known, except what was spun by the hand, from distaffs, or common spinning wheels; that the fabrick in question could not have been in the contemplation of the legislature, an hundred years and upwards, before its invention; that the books of rates valued cotton yarn, at two shillings the pound, and no more, whereas, it appeared, in evidence, that cotton warps might be made of the value of five pounds sterling the pound, that cotton warps were not only spun, by new invented machinery, in a manner wholly different, from that which was known, when the book of rates was framed; but underwent certain operations, to fit it for becoming *warp*, to which the cotton yarn, or *weft*, was not subjected, being passed thro' rollers, which compress the filaments, and give the material, a wiry hardness and firmness, from whence, the aptitude to become *warp* arises; that the material called *warp*, not only derives new properties, from the operation of new machinery, but takes a new denomination, from the purpose to which it is rendered applicable, and gives birth to new manufactures, British muslins and calicoes; which were wholly unknown, in these countries, till *Arkwright's* invention of water machines and rollers, enabled the manufacturer to make cotton *warps*; this dispute has been settled by the legislature in conformity, with the representation of the *Irish* manufacturer; and, among other alterations in the book of rates, cotton *warps*, or *twist* are made liable, by express words, to pay a duty *ad valorem*.

† See the journals of the house of commons, for the petition of the proprietors of cotton machinery, and mills, to parliament, on this subject; praying an encrease of duty, on the importation of cotton *warps*.

and skill; and uncommon strength, of capital, and pecuniary expence.—It appears, from a review of the state of the cotton manufacture, in the year 1787; that nearly two thirds of the then existing cotton mills and machines, had been erected, within the last seven years; and that above a million of money had been expended, within that period, on the erection of mills, hand-engines, and other machinery, including the purchase of ground, and construction of houses, and other necessary buildings for the cotton works.

Such is the superiority of *Britain*. It is observable that her superiority is chiefly palpable and striking, in those operations on the raw material, which precede its coming into the hands of the weaver; that is to say, in the operations, which require great capital, and are performed by extensive and costly machinery. It will do infinite honour to the perseverance and industry of our manufacturers, if, undismayed by the formidable rivalry of *Britain*, and her present superiority, they proceed to combat the many disadvantages under which they at present labour, and succeed in establishing the cotton manufactures of this country, on a footing of equality with those of *Britain*. At present, the fact is, that vast quantities, of cotton warp, and weft must, of necessity, be imported into this country, to answer the demand of the looms that are employed, in all the various kinds of cotton fabrics, from muslins and calicoes, down to thicksets. For, the water-machines, and mules, and jennies as yet erected in this country, with their best exertions, are able to supply but a small proportion of the current consumption of spun cotton, for different purposes of manufacture.*

Notwithstanding the unfavourable circumstances, I have stated, the industry of *Ireland* is not wholly left without motives of incitement.—In
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* See the journals of the house of commons, for a petition from the weavers of cotton fabrics, and others of opposition to the petition, from the proprietors of machinery, and spinners of cotton, which called for an additional duty on spun cotton, imported.

the first place, the demand for spun cotton, which is, as it were, the *primum* of an infinite variety of fabrics, for wearing apparel, and furniture, proceeding from the loom, exclusive of that of stockings. Candlewick, which employs the coarser parts of the cotton wool in general, and cotton wool of inferior quality, is an article in very extensive demand; and large quantities of it, are, at present imported into this country.

In the next place, the natural advantages of this island are highly flattering; the noble situations which a country so well watered as *Ireland*, every where offers for the erection of machinery, must captivate the eye of speculation; and gradually may lead the manufacturer of cotton, in the web, as he encreases his capital; to sink a part of it in mills, and machinery, and supply himself with spun cotton whether weft or warp, which is to him as a raw material, and which he now imports from *Britain*. Thus, the number of water-mills, and other machines may encrease, until, in process of time, this country may become able to furnish the home market, with every part of the cotton manufacture, that machinery can produce.

A third and most important consideration is, that, although the prime cost of the raw material is very considerable, the derivative or adventitious value of cotton manufactures is very great, so that few exertions of industry and productive labour propose higher rewards to the skill and application of the workman. A pound of raw cotton wool may be worth from two to three shillings per lb. weight. The same weight of cotton warp, or twist produced from *Arkwright's* water machine may rise in value to five pounds sterling. Such an astonishing return for the employment of capital, and exertion of industry, must prove a most powerful incentive indeed, to the prosecution of a manufacture.

It is, however, worthy of remark, that large establishments for the prosecution of the cotton manufacture have been injurious to the morals and health of young people.

SECT.

SECT. 4.

Comparison of the linen, woollen, and cotton Manufacture.

Next to the prosecution of agriculture, and as subsidiary to its prosperity and encrease, the three manufactures, which have been the subject of the preceding sections, ought to be the great objects of industry in this country. They are all, in some degree, established; the natives have already acquired greater or less skill, in all; and in the linen manufacture, they have attained to unrivalled excellence. These manufactures, in common, require a copious supply of water, and are, in that particular well adapted to this country. They have also a degree of connection or affinity with each other.

There should be a kind of system and method, in the encouragement of industry, in order to promote it, to the best advantage. A new and solitary manufacture not connected with, or dependent on one already known and established, cannot so soon take root, or so speedily bear fruit, in a country, as one that is in a different predicament. The knowledge of the art of weaving, which is every where diffused, in a greater or less degree, by the general prevalence of the linen manufacture, and of the coarser branches of the woollen, must render the establishment and diffusion of the cotton manufacture less difficult, than that of many other new arts and trades, wholly different from, and unconnected with the business of spinning and weaving. So far, these manufactures harmoniously combine, and seem to draw together.—But, suppose, their interests should, on any occasion, diverge, and a question of preference arise respecting them,—then, we must consider, both the intrinsic merits of these manufactures—and their relative merits, which consist in an

aptitude for being successfully carried on, in a country circumstanced like *Ireland*.

This comparison must be instituted, on the principles laid down in the foregoing sections. I shall briefly revert to some of them—in point of intrinsic utility, of universality and stability of demand, independent of the empire of fashion, the linen manufacture seems to hold the first place,—the woollen comes next—the fabricks of cotton are decidedly inferior to them both.

With respect to circulation and foreign demand, the linen manufacture of *Ireland* claims a proud pre-eminence, and disdains all comparison. Our exports of woollens and cottons are, at present, trifling; our linen manufacture is, in truth, a magnificent branch of trade, sufficient, in itself, to employ a nation, and enrich a country. The export of wool manufactured from this country, is nearly confined to yarn, the export of the finished woollen fabricks, though trifling at present, is yet rather progressive, than otherwise; and capable of great extension.—Considered with respect to demand, whether arising from the home consumption or foreign market, I think, the cotton manufacture has less capabilities of extension and profit, than either the woollen or the linen, and I think this country has less prospect of carrying the capabilities of the cotton manufacture, as far as they will bear, than it has of improving on those of the woollen, and the linen. Yet, certainly, in the coarser kind of cotton fabricks, we have now attained an equality with *England*.

With respect to the *prima*, or raw materials, the manufacture of cotton, is infinitely inferior, in merit, to those both of flax and wool; the raw materials, which are worked up in the cotton manufacture, are almost entirely foreign; the raw materials of the principal part of the woollen manufacture, and almost entirely of the linen manufacture are, or might be domestic. If we except reeds, *Spanish* wool, fuller's-earth, and some of the stuffs and materials used for dying,* there is nothing
to

* Many dying stuffs, and the materials for bleaching, might be obtained at home.

to be imported for the woollen manufacture. Flax seed, some of the materials of bleaching, and a very inconsiderable proportion of dying stuffs, are all that the linen manufactures ask from foreign countries, and even with most of those importations, particularly with the most considerable of all, that of flax-seed, ~~the~~ they could well dispense.

From what has been already advanced, it appears, that the largest capital of all is requisite for the cotton manufacture, through all its branches; the next largest, for the woollen, and that the linen requires the smallest capital of any, in the individual, who undertakes it. On this account, the latter is the manufacture, which is best adapted to a country like *Ireland*, which does not abound in capital; and may best be carried on, in a small way, by industrious individuals, in their own habitations.

In regard to the number of persons, to whom these different manufactures can give employment, in order to produce fabricks of a determinate value, the linen manufacture holds the first place, the woollen comes next, and that of cotton ranks the last. More persons, beyond all comparison are employed in cultivating forty acres of flax, to produce the *primum* of linen, than in tending and shearing sheep, on forty acres of grafs. As to the cotton manufacture, the *primum* comes to the manufacturer ready prepared for being spun; but on the other hand, to counterbalance, in some measure, the numbers of people employed in husbandry, to provide the *primum* for the linen and woollen manufactures; the cotton manufacture employs more manufacturers and mechanics, in the construction of its apparatus of buildings and machinery, than the woollen. The woollen employs more persons of that description, than the linen. In what is properly to be called the manufacture of the commodity, that is to say, in the several operations of spinning, weaving, and finishing the respective fabricks, by a number of processes of various kinds, till they are fit for the market; the linen and woollen manufactures, as I apprehend, employ nearly the same numbers, the advantage is rather on the side of the woollen, the cotton manufacture fewer, in proportion, as its extensive machinery causes a great saving of labour. The three manufactures

have one great advantage, in common, that of employing numbers of women and children.

As to the effects of labour and skill, creating a value, and adding it to the *primum*, or in other words, as to the relative advantages, which result to the individual, and the community, from the exercise of these different manufactures, it is computed, that the people employed in the linen manufacture, earn in a given time, one third more than those in the woollen. If we consider what may be added to the stock of the community, by a given quantity of land,—one stone of wool is the produce of an acre of grass land, which feeds two and a half, or three sheep; this wool, in its raw state, is equal to a third of its value, when manufactured. This, at twelve shillings the stone, makes the gross produce, by working up the *primum*, from an acre of land one pound sixteen. Flax, at eight hundred weight to the acre, made into the worst linen, produces a gross return nearly eight times greater. The cotton manufacture is perhaps capable of carrying the adventitious, or derivative value, which results from workmanship, or operations on the raw material, to a higher pitch, in its department, than either of the others; but much of this excellence is to be attributed to machinery; little, in comparison, to the individual excellence of the artisan.* The marked distinction of excellence in execution, and the certainty of reward to superior merit, in the artisan, is favourable to the progress of industry, and advancement of the arts, as far as they arise from the exertions of individuals. This we may call the progress of manufactures *a posteriori*. The power and levelling principle of machinery, is more favourable to the progress of industry, and the advancement of arts, as far as they depend, on the employment of capital; this we may call the progress of industry *a priori*.

With respect to the replacing of the capital, advanced by the country, for the support of these manufactures, together with a profit; in other words,

* Yet much of the value of stamped or painted cottons depends on the workman.

words, as to the tendency of these manufactures, respectively, to enrich the country that exercises them; it must be considered, that this capital is made up of the capital of all the individuals in the country; this being the case, it follows, that, with regard to the augmentation of the national wealth, the linen manufacture holds the first place, the woollen the second, and the third is due to that of cotton.

We come, in the last place, to compare these manufactures with a reference to the danger of competition. Our linen manufacture stands fearless, and triumphant, in maturity of skill and reputation, despising rivalry. Not so the woollen and the cotton; the two great markets of the *Levant*, and *Portugal* have been pre-occupied, the former by *France*, the latter by *Britain*.* No country has applied itself, with greater application or success, to the cultivation and improvement of the woollen manufacture than *France*; nor has she been inattentive to that of cotton, or unfortunate in her attentions. Her attention has been particularly directed to the theory and practice of dying; and her superior skill and excellence in that art, so necessary to the perfection of the fabrics of wool and cotton stand universally acknowledged. The present misfortunes and distractions of *France*, may, for a time, retard the progress of manufactures, or even cause them to become retrograde, for a season, yet, when peace shall return, with settled freedom in her train, the arts and industry of the country will return in new glory. Be that as it may, it is from the rivalry of *Britain*, that our manufactures of wool and cotton must encounter the chief obstacles to their prosperity and extension. *Britain* possesses superior capital and superior skill, and the operation and influence of these immense advantages will be powerfully seconded by the constant exertions of active jealousy, and vigilant policy.

SECT.

* By means of the *Methuen* treaty a great source of the opulence of *Britain*, she possesses the monopoly of cloathing *Portugal*. Such was the case, when this Essay was written; the late treaty of peace between *France* and *Portugal* puts matters on a different footing.

SECT. 5.

Of the Silk Manufacture.

The silk manufacture was formerly of much greater extent and dignity, than it is at present; yet, still it is respectable, even in decay. Many of its productions are still in constant use, and though the consumption of silken fabrics is wonderfully diminished, it affords employment to a large number of persons. Of those persons many are women and children, a circumstance which must always entitle a manufacture to the consideration and support of an enlightened legislature.

Hose of silk, ribbands, laces, edgings, and fringes, sattins and velvets are still in general use; but the consumption of silk and velvet, for the garments of men and women, is not a thousandth part, of what it was, in former times. Even, in the capital of this island, the silk manufacture was formerly a considerable object, and vast numbers of looms were constantly at work, in the fabrication of velvets, sattins, silk handkerchiefs; not to mention lustrings, perlians, modes, damasks for garments, and furniture of rooms; fancy silks, of various colours, and patterns, for garments. At that time, velvet was universally worn, in dress suits, by persons of fashion, of both sexes. It was used by women of inferior condition, in cloaks, hoods, and masks; and caps of velvet were then fashionable, not only among boys but grown men; (our round hats have long since superseded the general use of caps.) The very manufacture of silk handkerchiefs was then a very considerable article, as the use of them in the pocket was general. Of late years, handkerchiefs of lawn or muslin have usurped their place; and this branch of the manufacture has fallen into decay;* on the other hand, the demand for silk stockings has increased; the case is the same with respect to ribbands; and there is a considerable demand for farcenets, peelings, and the species of silk called mode.

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* Very lately some attempts have been made to revive the use of minor branches of the silk manufacture, in the dress of men and women.

The silk manufacture deals more in the fabrics of luxury and superfluity, than the linen, the woollen, or even than that of cotton. In our own days, we have witnessed it retaining much of its ancient prosperity, and have since beheld its rapid decline to a state of comparative insignificance. This great change has chiefly taken place, since Arkwright's invention of cylinders and water-machines have enabled the *British* manufacturer to produce cotton warps, and those of any degree of fineness, by the help of which, the weaver is enabled to produce *British* mullins and calicoes, little inferior in quality, to those of *India*, and at prices infinitely reduced. The fabrics of cotton are so light, so cheap, and at the same time so ornamental; and the grand advantage which they, in common with linens possess, of being susceptible of washing over and over again, without detriment, is so favourable both to cleanliness and show; that we cannot wonder at this revolution, in favour of cotton, to the detriment of silken fabrics.

The silk manufacture being so much the creature of fashion, which exercises a despotic and capricious tyranny over what yet remains of it; much of its merit and success must depend on fancy, taste, the newness of the pattern, the seizure of the fugitive glance of fashion. It should therefore seat itself in a capital, or some place, where government is fixed, where a court is held, and fashions* originate; that it may mark and catch the fluctuations of vanity, living as they rise, and thrive on the expences and follies of the rich and luxurious. This necessity of being carried on in a capital is a strong objection, to a manufacture. Artists residing in great cities are commonly more dissipated and vicious, and more disposed to riot and combination, than any others. If this should not be the case, notwithstanding the high price of labour, they will be more poor and wretched, than other labourers; both, on account of the advanced price of all necessaries of life, and of the injuries which their health must sustain, from the noxious air
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* See Dr. Smith's *Wealth of Nations*.

they inhale, crowded into miserable hovels, in narrow lanes and alleys, where the cheering fun and invigorating breeze never gain admittance. Add to this, that the fluctuations of fashion, and other causes, such as a general mourning, the capture of a few ships laden with the raw material, may suddenly put a total stop to the manufacture; and leave the wretched artisan, whose subsistence must be derived from it, wholly destitute.

I do not hold it good policy, to make great exertions, in directing the capital of a country to a manufacture, like that of silk, which is subject to rapid fluctuation, and sudden declension. The last generation studied formal dignity and expensive grandeur, more than becoming elegance, graceful economy, or individual accommodation. Houses, in general, were loaded with superfluous ornaments, without;—inconvenient and gloomy within.—The furniture was answerable, massy, large, and immoveable; the chairs enormous, the tables round. Large perukes, immense hoops, vast cuffs and flounces, stiff brocades, velvets and embroideries seemed to announce the dignity, or at least the self-importance of the wearers, by the burthens with which they encumbered themselves. In those times of expensive finery and gaudy parade, the silk manufacture was in its zenith.—When the light and ornamental began to supersede the rich and stately. A thousand different manufactures of linen, wool, and cotton came into esteem; and the pompous brocades and velvets of *other times* sunk into disuse; and fled to the antiquarian wardrobes, and repositories, of old maids and bachelors, for refuge from general contempt, and from the claws of the cast-clothes man.

It is further to be considered, that the *primum* of the silk manufacture is imported,—comes from regions, at a considerable distance, and is more costly,—than the raw materials of the linen, the woollen, or the cotton manufacture; another motive this, to render us less sanguine, in the prosecution of the silk, than of any of the foregoing manufactures. Where the charge of freight and carriage is heavy,
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and the first cost of the *primum* great, the risque of losses, from the failure of speculations will be proportionably great; on which account, the silk manufacture does not seem well adapted to the means of a country, which possesses but small capital. The reason, why countries in that predicament, are at all induced to engage in it, is, that many of its branches, as the manufactures of stockings, lace, ribbands, requires but little capital, to commence them, in a small way, though the country may require great capital, to carry on the manufacture, at large, or collectively, with advantage; the apparatus for the manufacture of the branches in question, being cheap, and easily to be procured.*

This is a manufacture, which, perhaps, we can the least of any expect to carry on, to a great extent, so as to make its fabricks an object of export, or even to supply our own home consumption; in opposition to the rivalship of *England*; and that rivalship we must be sure to encounter. In this manufacture, in addition to superior skill, superior capital, and all the advantages, that these, aided by a jealous policy, can bestow, *Britain* possesses one circumstance of superiority, which must exclude all competition: the seat of government is there, the wealth of the *British* dominions returns to *London*, as to the heart, the seat of life, and from thence emanates all courtly state, all luxury in dress, and furniture, all imperial splendor! By the possession of superior capital, *Britain* will have the *primum* of this manufacture, the first cost of which is great, on cheaper terms, and of better quality, for the wealthiest dealer always has the choice of the market, and is able to take advantage of particular times and contingencies; and being in possession of the first debut of fashion, in a manufacture, where fashion bears sovereign sway, her fabricks will always take the lead in the *Irish* mar-

VOL. IX.

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* The subjects of the *British* empire will be laid, in future, under great difficulties, in procuring the *primum* of the silk manufacture, by the late extensions of *French* dominion and influence.

ket, recommended, as they will be, by the gloss of novelty, and the stamp of vanity; while the imitations of our native artisans, will lag behind; and always be a fashion in arrear, with the demands of luxury.

The late rise in price and scarcity of silk, from the capture of the *Mediterranean* convoy, the subjugation of *Piedmont* and *Lombardy*, by the *French*, and expulsion of the *English* from *Leghorn*, may teach us the precarious nature of all manufactures, that depend on this *primum*, and show, how frail and fallacious we ought to account that portion of public wealth, and prosperity, which arises from an employment of capital in the silk manufacture.

The Dublin Society, with great perseverance, and well-meaning, but I think, grossly mistaken zeal, exerted itself, to encourage and protect the silk manufacture of this country; and promote the sale of its fabrics. It opened a warehouse, for the purpose of receiving and vending fabrics of silk, by wholesale and retail. It proposed a premium of three per cent. on all wrought silk, bought by wholesale, at their warehouse, to be sold again by retail. These efforts have produced little effect; *Young* observes, that when he wrote, which was about eight years ago, the wholesale demand cost the society but six hundred pounds yearly, on account of the premium, of three per cent. on goods, making the amount, in value, of such goods something less than twenty thousand pounds. During the last eight years, the silk manufactures have still farther declined, and are, now, in a truly feeble and languishing state in *Ireland*.

Young has some sensible observations, though given in his usual pert manner, on the exertions of the Dublin Society, in favour of the silk manufactures. He says truly, with respect to their premium of three per cent. on fabrics bought, to be retailed, and its small amount; “that it only tends to ascertain the insignificance of the whole *Irish* silk manufacture, and that, if the mercers have not a demand for silks, this

“ this premium will not make them buy ; if they have, they will buy
 “ without the premium.”*—“ Of all the fabricks, says *Young*, this (of silk)
 “ is the least proper for *Ireland*, and for any dependant country. It is
 “ an absolute manufacture of taste, fancy, and fashion. The feat of
 “ empire will always command these, and if *Dublin* made superior silks,
 they would be despised, in comparison with those of *London*. “ We feel
 “ something of this kind, in *England*, with respect to *France*. To
 “ force a silk manufacture in *Ireland*, is to strive against whim, ca-
 “ price, fashion, the prejudices of mankind ; instead of which, it is these
 “ that become the support of a manufacture, when it is wisely set
 “ up.—No linens are fashionable in *England*, but those of *Ireland*, yet
 “ those of *Holland* are stronger.—Should not the *Irish* try to drive the
 “ nail that will go, instead of plaguing themselves, with one that never
 “ will.”

SECT. 6.

Of Hardware, and other Manufactures, where Fire is a principal Agent.

There is a manufacture, which in *England* has attained such a degree of prosperity, that it may enter into competition with any of the foregoing. I mean that of hardware ; to which the founderies, and the fabrication of arms are appendant. Theorists, in discussing the relative merits of manufactures, may be dazzled, by observing the astonishing progress of the sister country in this branch ; the multitudes, who find employment ; and the vast treasures, which flow into the country by means of it ; but, when we debate, on the establishment of any given manufacture, in a given country, we should consider not only the intrinsic merit and utility of the manufacture itself, but the means

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of

* It scarcely amounts to three pence per yard on an average.

of carrying it on, with which, the country, in question, may be furnished.

Few manufactures possess greater intrinsic recommendations than those of hardware. Many of the productions of art, from metallic substances, particularly from iron, are commodities of the first necessity; instruments, and utensils, highly necessary, for the subsistence and comfort of man, the decencies, and elegancies of life; the protection of the country, the exercise of every art, manufacture, and form of industry. The productions of these manufactures stand wholly clear of the dominion of caprice and fashion, and are less liable, than any others, to fall into disuse. The demand for them must be co-extensive with the civilization of man; co-existent with the duration of society. They are objects of export to the most savage tribes, on the remotest shores.

It may be added, in praise of most of the manufactures of hardware, that they do or might operate, on a domestic *primum*, (I speak with respect to *Ireland*) since this country abounds in mines of almost every kind of metal. It is rich, in those, which are most useful, lead, copper, and iron.

These are; perhaps, the most favourable of all manufactures, to the encouragement of industry, the progress of labour and skill. There are none, perhaps, that admit such minute and subtle divisions, and subdivisions of labour; of course, there are none, in which the workmen can be expected to attain to such perfection, both for dexterity, celerity, and neatness of execution in the particular things, about which they are occupied. There are no manufactures, that carry to so great an extent the adventitious value, resulting from the labour and skill employed by the workman, on the crude material; consequently, there are none that offer higher rewards, to the exertions of industry. The values of the raw or crude materials of hardware are, as nothing, compared with that of the finished fabrics. The workman, from a mass of iron, but a few pence in value, will produce a sword hilt, scissars, knives, or razors, that may be worth as many pounds. How inconsiderable is the first cost of the materials employed in a watch worth
fifty

fifty pounds! The same may be said, of various manufactures, in tin, papier machee, copper, ivory, and even in silver and gold. The workmanship is nearly all in all; but, in this respect, as well as in extent and utility, the fabrics of steel have a distinguished pre-eminence.

The manufactures of hardware in this country are, at present, in a low and contracted state. Far from being able to enter into competition with *Britain*, much less to obtain a superiority over her, in the foreign market, in the fabrication of arms, cutlery, the finer kinds of hardware, watches, toys, enamelled work, and what we call the manufactures of gallantry; our productions of those kinds fall very short of supplying the demand of the home market, and for a supply of the deficiency we depend on *Britain*. It is not, so much, in the superior quality of the commodities, that the superiority of the *English* manufacturer appears. We produce various articles of cutlery, watches, locks, fire-arms, toys, manufactures of gallantry, various instruments and utensils, for the use of arts, sciences, manufactures, and husbandry, in short all fabricks, which can be wrought out of metal, of a quality, which would not disgrace the best *English* artists. It is in the unequal prices of fabricks of the same kind, and equal quality produced by *British* and *Irish* workmen, and the great advantage, in point of cheapness, on the side of *British* manufacture, that the overbearing irresistible power of superior capital and superior skill appears.

Indeed, I think, the superiority of *Britain* is no where so evident, as in the department of hardware. The manufactures of *Sheffield* and *Birmingham* are sold in *Ireland* infinitely cheaper, than articles of a like quality, fabricated by native workmen, can be afforded, on the spot where they are made. Yet, these goods must be conveyed, a considerable distance, from the place where they are made, to the port where they are to be shipped for *Ireland*; in fact, they are conveyed almost invariably by means of the inland navigation to *Liverpool*, from whence they are forwarded to this country. For the transportation of these goods to *Ireland*, freight, sometimes, insurance must be paid; the commodities

modities are subject to different duties of import and excise, on their entry in the ports of this kingdom; then come the charges, for the carriage from the Custom-house quay, for storage, and factorage; (for most of the trade in hardware between *Britain* and this country is managed by factors.) It is a fact, that most of the arms, if not the whole of them, which are required for the use of the troops, on this establishment, are furnished from *Birmingham* and *Sheffield*. This cannot be attributed wholly to the want of manufacturers in the country, were the contractors for government disposed to employ them; much less would I suppose the ungenerous design of giving a preference to the sister country, at our expence; in the very crisis, when *Ireland* is straining every nerve to assist her.—It must be attributed, to the more prosperous state of the *British* manufactures, which enables the workmen, to supply us, with their fabricks, on cheaper terms.

Much of this difference in price may be attributed to the superiority of capital, by which the master manufacturer is enabled, to divide and subdivide labour, by employing a very great number of workmen; so that less time is expended in the fabrication of any given article of the manufacture. Much of the first cost of a manufacture arising from the price of labour or hire of workmen, it is obvious, that, in proportion as the time requisite to produce any given fabrick is diminished, the first cost of the things in question, must be lessened. Add to this, what I have observed more than once, that a large capital acquires *primum* of the best quality, on the cheapest terms; lastly, it is to be considered, that the manufacturer, with the greatest capital, will content himself with the smallest profits. The extent and multiplicity of his dealings will counterbalance the smallness in any individual dealing. Great capital must overlook petty details, and proceed on an enlarged scale. The manufacturer will readily perceive, that the accumulation of wealth must rather depend, on the quick return of so large a capital, that it may again become more productive, than on
partial,

partial and disjointed profits, however large, in proportion to the share of his capital, which they arise, making in the aggregate, but a slow and scattered return of the whole.

But it is not, merely, from superiority of skill and great strength of capital, that *Britain* derives her superiority, in the manufactures of hardware. In my mind, the abundance and cheapness of fuel is the greatest cause of the cheapness of her factories, in this branch of industry. In the division of labour, in the construction of mills and machinery, to facilitate or improve the operations of those, who work in metals, or to increase and multiply the powers of the human hand, we might easily emulate the *British* artist, or even sustain a competition, with him. The scarcity and high price of fuel, which, at present, embarrasses industry in most parts of this kingdom, are what most powerfully discourage the judicious adventurer; and must render it doubtful, whether *Ireland* can, by any exertions of her own industry, or the most flattering encouragement of the legislature, be brought to rival *Britain*, in any of the metallic factories; until this grand desideratum shall have been supplied.

Firing—which term comprehends not only coals, timber, and peat, but also coke and charcoal, is so necessary to be provided, in large quantities, for the preliminary operations of smelting and assaying; as well as for the use of foundries in brass and iron; of smiths, cutlers, gilders, enamellers, silver-smiths; and a multitude of other artists connected with these, that we must consider fuel, as in some degree, a *primum* necessary to those manufactures; and this being supposed, *Ireland* with respect to all the productions of such manufactures, must be considered as a country, which brings her *primum* from afar; and, in fact, she must add the freight, duty, carriage, and factorage, of the coals she consumes, in the factories in question, to the first cost of this important article. While this is the case, with what prospect of success, can she contend with a country, that finds this *primum* or essential requisite at home?

From

From the foregoing observations it will appear, how improvidently we acted, with respect to the intended settlement of *Genevese* emigrants, in this country. We incurred heavy expence, in preparing a town, for the reception of persons, who were to have been employed in the manufactures of hardware; without previously considering, whether the natural and acquired advantages of this country, were well adapted to the prosecution of those manufactures; or enquiring, whether the contracted state of metallic fabricks, in this country, was owing to the paucity of workmen, or to the want of other requisites.

Whatever hopes might have been entertained, at one time, from the settlement of the *Genevese* in this country; we may calculate, with more certainty, on the progress of the arigna works in iron; and predict more great and certain advantages to *Ireland*, from their prosperity and extension. There, an abundant supply of coal is united with a rich vein of ore; and, in process of time, we may expect to find the whole consumption of the kingdom supplied, from thence, with the coarser species of iron *fabrics*; as the irons necessary for buildings, machines, and carriages; the various utensils of domestic economy; the instruments of husbandry. There, also, with proper national encouragement, founderies for cannon, and manufactories of small arms, might be established. We might also engraft on these more gross and gigantic fabrics, the manufactures of cutlery, and the cheaper and more useful kinds of hardware. But I doubt much, whether *Ireland* will, by any exertions, be brought to rival *Britain*, in the finer works of polished steel. Has not Nature herself imposed insuperable obstacles to her progress, in this department, by the extraordinary humidity of the climate; which must incessantly counteract the labour of the artist; and take off much of the brilliancy of their finishing, from works of polished steel? Be that as it may, it is time to hasten to other manufactures.

The transition from the metallic manufactures is easy, to other fabrics, in the formation of which, fire is the principal agent; such, in the first place, are potteries, and the glass manufacture. These are a great source
of

of wealth to *England*, employ a multitude of persons, and disperse their productions into every part of the civilized world. Vast sums of money are annually drawn out of this country, in particular, for them. We learn, from *Young*, what general circulation they had obtained in *France*. At the same time, he informs us, that they had begun to make in that country, rude imitations of the *Staffordshire* ware. Had peace remained, and the commercial treaty subsisted; it might have been wiser for the *French* nation, as I believe it is wiser for the *Irish*, at present, to pay tribute, in that department, to the superior industry and skill of *England*; than to suffer her exertions to be diverted, to subjects of new speculation, from objects of solid and tried importance.

Nevertheless, if we except the scarcity of fuel; nature has not been unfavourable to *Ireland*, in this respect. Veins of potters clay are found in many parts of the country. We formerly attempted some things, in the walk of pottery, in *Dublin*, and, if I mistake not, in *Cork*. A manufacture of stained or painted ware, in imitation of *Delft*, or rather of *Rouen*, was carried on successfully for a time, and came into very general circulation; but this manufacture, after languishing for a considerable time, has long since died a natural death.

Glass is a substance susceptible of such an unbounded variety of uses and forms; it is capable of being wrought up to such a surprising degree of brilliancy; it not only contributes so much to the embellishment of our houses and tables, but is so necessary, in an infinite variety of applications, to the comfort and convenience, the cleanliness and health of man; that it must quickly become an object of great consideration, in every country, where industry resides. Consider the prodigious advantages of glazed windows, in our climate, where the sun is seldom so powerful, that we should wish to exclude him, and where the object of the architect must be, to transmit as much light as possible, and, at the same time, to exclude the damp air. Consider the variety of useful vessels, for common purposes, that are formed of this substance; consider its important services to science; particularly, in chemistry, optics, and electricity.—It is no wonder, there-

fore, that every country should feel the value of this manufacture, and wish to exercise the arts of producing its fabrics. In fact, the exertions of *Ireland* have been directed to this branch of industry; and her essays, as far as they have extended, have been more successful, than in most other manufactures, and reflected equal credit on the taste and application of our workmen.

Specimens of the manufacture, in question, have been produced, both from the *Waterford* glass-house, and from some of the manufactories in *Dublin*, not inferior in execution to any thing imported. We have already obtained a considerable share of our home market; and have even arrived at the exportation of some articles, particularly glass bottles, to *America* chiefly; but the amount of this exportation is, as yet, inconsiderable. Enough, however, has been done, to shew, that our manufacturers want neither perseverance, nor skill, to carry it on successfully. It is one of those few, in my humble opinion, which have taken such deep root, and sent up such fair shoots, as make them worthy of the cultivating hand of the legislator.

A mine of *cobalt* is said to have been lately discovered, in the county of *Kerry*. Should this prove to be the case, it would be a fortunate discovery, for the glass manufactures of this country; and for potteries, if they should be hereafter carried on; for *cobalt* is the substance, which is employed to give their beautiful blue colour to many fabrics of the glass manufacture; and to earthen ware.

There are but two obstacles, to the general progress and prosperity of the glass manufacture, in this country; want of capital, and want of fuel. The crude materials of the glass manufacture are not costly; but the necessary apparatus, particularly, the buildings for carrying it on, highly so; and the consumption of fuel great and incessant. Were we on a par with *England*, in respect to capital, and to the cheapness and abundance of fuel, I do not think that our glass manufacture would yield, in any respect, to that of the neighbouring country. The former inconvenience, time, industry, and frugality may remove. Much of the latter might be remedied, by a judicious attention to
improve

improve the inland navigation of the country, and to open a communication, by canals, with those parts of *Ireland*, (and there are many) which produce coals, so necessary to the prosperity of the glass manufacture.

In this cursory notice of mechanical arts, wherein fire is the chief agent, it may be proper to glance at breweries and distilleries. These are manufactures, which require large spaces of ground, and the erection of various expensive buildings, when they are carried on extensively; and consume great quantities of fuel. Of course, this country, from its want of fuel, labours under peculiar disadvantages. To these we must add an obstacle, more powerful, than both the former united, a severe and oppressive code of revenue laws. This is the more to be lamented, as the fertility of soil, in this country, affords a superfluity of grain, after feeding the inhabitants; and the situation of the country, watered, as it every where is, by streams and rivers, is favourable to the establishments of breweries and distilleries. The employment of capital, in these branches of industry, deserves particular encouragement, both, as they contribute to the advancement of agriculture, by affording a ready market, and constant demand, for grain; and as they defray a considerable part of the national expences, by a heavy excise. Prodigious sums of money are yearly drawn out of this kingdom, for porter, and other malt liquors; most, if not the whole of which, might be retained in it, were the breweries of *Ireland* properly regulated and encouraged.* As for the distilleries;—I am far from being an advocate of drunkenness; I am far from wishing, to remove the restraints and discouragements, from those who sell spirits, by retail; at the same time, I cannot join in the cry, of those declaimers on sobriety, who would willingly annihilate the distilleries of the country. Such people are unable, or unwilling, to examine the state of *Ireland*, and acquire a knowledge of its true interests. It is to be observed, that the distillers of *Ireland* have acquired consum-

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* Since this Tract was first written, the case has altered materially, in favour of this country; and porter, and home-made spirits of malt are become an object of exportation.

mate skill in their art; infomuch, that some ingenious persons of an experimental turn, who are engaged in this business, are able to produce a spirit from grain not to be distinguished from brandy, by the best judges; and that considerable quantities of this spirit have been sold as brandy, since the intercourse with *France* has been interrupted. It is also observable, that the malt spirits of this country begin to be an article of export. Be that as it may, it is time to dismiss the present class of manufactures, and hasten, onward, in my proposed task.

SECT. 7.

Miscellaneous Observations on other Manufactures.

The manufacture of hats, of the coarser kinds, deserves to be a favourite of the legislature, both, as producing an article of the first necessity, a most useful and convenient part of apparel, for the lower sort of people; and employing domestic raw materials; the wool of lambs chiefly in felts, and the fur of rabbits, or both materials combined, in hats of a superior kind. In these branches we are tolerably successful; the manufacture of coarse hats is universally diffused, and the consumption of the lower classes in *Ireland*, is almost entirely supplied by the industry of their countrymen. I need not dwell on these branches, they are, in some degree, to be considered as appertaining to the woollen manufacture. As to the finer kinds of hats, We are vastly inferior to the *English*. They are both able to produce hats superior in quality, to any manufactured in *Ireland*; and they are also able to undersell us, by a very great proportion, in our own market. This superiority is to attributed, no doubt, in some degree,

to

to superior capital, which enables them to take the first choice of the market, and procure the fur of the beaver, which is the raw material of fine hats, of the first quality, and on the most reasonable terms. This is, no doubt, a great advantage; but much of the present superiority of *English* hats, in cheapness, and quality, must be ascribed to the excellence and skill of *English* workmen. We ought, not, however, to be so much afraid of a competition with *England*, in this, as in many other manufactures.—It is one, which has already taken extensive possession of the country, and diffused the knowledge of itself very generally; and it is one, which requires less apparatus, and extent of capital, to carry it on, with credit and success, than any others.

Formerly, the manufacture of shoes, was an object of considerable importance in Dublin; and large quantities of the fabric were exported to *America*. Of late years the manufacture has declined. This decline may, I believe, be attributed, in some measure, to the scarcity of oak bark. The want of this material, so necessary in the progress of manufacturing leather, was so severely felt in this country, that the *Dublin* Society, with a laudable sollicitude, directed their attention towards the provision of some substitute for bark, which might alleviate the inconvenience. Different astringent vegetable substances* have been tried; but with no very flattering success. Of late, some judicious manufacturers have wisely turned their thoughts, to mineral substances, which are more powerful agents. It is by the use of mineral substances, that the *French* manufacturers have been able to accelerate the operation of tanning, and they are said to have succeeded in this, in so high a degree, as to be able to prepare a raw hide for use, in the course of a few days.

However that may be, in consequence of the scarcity of bark in this country, raw hides and calves skins are daily exported, in great quantities; and tanned leather and dressed calves skins are constantly imported, to supply the consumption of the country; and so it must be continued, until, by the encouragement of plantations of oak (a
remote

* There are forty or fifty different vegetable substances, which contain the tanning principle, in a greater or lesser degree.

remote prospect that!) or by the invention of some substitute for oak bark, the people of *Ireland* may be enabled to manufacture their own leather. Should that desirable change take place, the manufactures of leather, shoes, saddles, bridles, harnesses, and accoutrements for soldiers may become a considerable article of export from this country.

The manufactures in leather deserve the encouragement and protection of the legislature, both, as producing articles of the first necessity, and as operating on a domestic *primum*, and being such as do not require, in their commencement, a very great capital. On this account, the present tax on leather, independent of its apparent cruelty, in seeming to be a tax on the comforts or necessities of the poor, appears to me to be an injudicious one, imposed in opposition to all the principles of political economy. Indeed, considering the immense difficulties under which the manufactures of leather in this country labour, from want of bark, it would have been wiser policy, in the legislature, to have come forward, and afforded them some material assistance, than to have loaded them, with a tax, at a juncture when they were merely struggling for existence, and this too, a tax, which must affect every branch of industry, in the country; agriculture, arts, trades,—no remission,—no exception;—inasmuch as it must be felt chiefly by labouring poor, and falls on an article of such necessity, that it cannot be retrenched.

The manufacture of paper seems to have been somehow connected, from the very beginning, with that of linen; for though its materials were not then of linen, *Egypt*, formerly the most famous country in the world for fine linens, invented the manufacture of paper; which soon became an object of commerce, with all parts of the world, and continued to encrease, and to flourish there, to the time of the decline of the Roman Empire. *Holland* and *France*, countries equally celebrated, in modern days, for fine linen fabricks, have also attained to great excellence, in the manufacture of paper. There was no ob-

vious

vious connection between the manufactures of linen and paper, in ancient *Egypt*; the raw material was not the same in both. With respect to linen, and paper as now manufactured, from rags and shreds of linen, there is a close and necessary connection, and alliance between them. Where an abundance of linen is made, and consumed, and fine linen is in general use, the shreds and fragments, that remain from the sempstresses and the milliner, and the quantity of decayed linen, inapplicable to any other use but that of making paper, will constantly supply the manufacturer, with this *primum* of the best quality, and on the cheapest terms; for the supply of linen rags in a country where linen abounds, will cost the manufacturer little more than the expence of collecting them.

The manufacture of paper has many advantages. It supplies an article of the first necessity. To it we are indebted, not only, for the diffusion of science, and the improvement of religion and morals, by the multiplication of writings and books.—The intercourse of social life is hourly indebted to it; it is become necessary to the security and transfer of property; to the operations of finance, of mercantile dealing, and exchange, the arts of printing, of musick, and engraving, depend upon it; and the arts of drawing and painting derive much service from it. Add to this a variety of elegant and useful inventions, for the decorations and furniture of our habitations; as paper-hangings, screens, and other contrivances, of the same kind. Next to linen and woollen cloths, there is perhaps, no manufacture, in such general demand, and of such extensive utility; and this is a demand, which, instead of fluctuating with the caprice of fashion, will endure to the end of time; and constantly encrease, with the encrease of population, and progress of refinement and knowledge. It employs a multitude of hands, and gives bread to the aged, the infirm, and the infant, in its various departments. The paper manufacture employs both domestic *primum*, and turns to a profitable purpose materials, which would otherwise be wholly useless, and unproductive,

unproductive, and must absolutely run to waste, if they were not thus employed. Add to this, that the paper manufacture is capable of more improvement, in texture, beauty, and value, by the exertion of skill and industry, than almost any other. There are papers not worth more than five or six shillings the ream; and there may be drawing paper worth twenty guineas the ream. The paper of some of the most ancient editions of the classics, those of *Aldus* in particular,—the paper of *Baskerville* and some others in *England*, that, employed in the publications of *Bodoni* at *Parma*, and of *Didot* at *Paris*, shew, to what an high degree of perfection the fabrication of paper may be carried; and the encrease of price is proportionable to the improvement of quality; so that there is no manufacture, that is susceptible of greater exertions, on the part of the workman, or that rewards them, with more liberality. The paper manufactory also produces many articles of necessary use, either to the fabrication of other commodities, or the sale of them; as wrapping, blotting, and marble paper, cards, and paste board.

The principal expence of a paper manufacture, consists in rent, for it occupies a large space of ground, the first cost of buildings, and apparatus, repairs, and workmen's wages;—the materials in addition, to linen rags, are shreds of parchment, or vellum, for the purpose of making size, vitriol, and roche allum. To these we add oxygen, which is now employed, in whitening the macerated mafs of linen, and smalts, or some other blue colour, which is generally used in the composition of writing papers; although this ingredient might better be omitted, in the fabrication of all sorts of paper.

This is a manufacture, to which the natural advantages of *Ireland* seem particularly to lead her; the number of pure streams, and of the finest water, which every where abounds, in this country, are particularly favourable to the creation of paper works. The manufacture has already made some proficiency amongst us; and the manufacturers have acquired competent skill. The manufacture at present, is certainly very inadequate to the consumption of the country; yet

yet, I think, it must be considered, as one which is in a prosperous and promising state.

An extensive pursuit and intimate knowledge of the linen manufacture may probably suggest many experiments, and observations, that may be serviceable in the fabrication of paper; either to improve the quality of the commodity, to shorten the process, or to reduce the expence of making it. For instance, the same materials and operations which are employed in the bleaching of linen, may be used, for the purpose of cleansing and whitening the linen rags for paper before they come to be macerated for the vat. The use of oxygenated muriatic acid, for the purpose of bleaching linen, and whitening the crude material for paper was first discovered by Monsieur *Berthollet*, and improved, and extended, by the celebrated *Lavoisier*, and other French chymists, it has been happily applied, in practice, in *England*, by those ingenious manufacturers, Messrs. Clement, and J. Taylor of Maidstone.

Is not the operation of hot pressing paper, to give it a gloss somewhat resembling that of vellum; analogous to the process of the calendar, in smoothing and glazing linens, diapers, and calicoes.

The superiority of *French* paper to that of all other countries is acknowledged. It not only excels in beauty, but, in durability, and aptitude for the operations of printing, engraving, and drawing. Such is the strength and toughness of texture in *French* paper, that if you fold up a sheet of it, and pass it through the ring of an half hundred weight, you may raise the weight, and wield it round your head, without any other hold. A degree of strength, which is not to be found in the paper of any other country.

The advantages of this firmness and continuity of texture, are great, when the paper comes to be moistened, and subjected to the action of types, and copper plates in the operations of printing or engraving. I need scarcely say, that the paper, being moistened, to make it fit for receiving the intended impressions is thus rendered weak, and susceptible of injury from the sharp points of the types and indented lines, of the plates which inflict on its enfeebled texture so many wounds. In proportion

as the intrinsic strength of the paper is great, the less will it suffer under the combined severities, of wetting, and working it, in the printing, or rolling press.

It would be useful to advert to the causes of this superiority, they seem to be chiefly these two. The peculiar structure of the wheel in the *French* machinery, which mashes, or triturates the stuff, in the vat, or receptacle. The cogs, or rather the ribs of the cylinders, by which this operation is performed being more distant from each other, the material is cut and broken into longer filaments, which, when they come to be combined in paper, wrap over, or intertwine and embrace each other, with more strength and tenacity, forming by their length an aggregate of greater durability.

A new cause of strength, may be the rejection of snail, and other blue materials, from the composition of *French* paper. Such substances evaporate, in process of time, and consequently leave, by their absence, many pores and interstices in the paper, whereby its strength is impaired, and it becomes daily more and more exposed, to the action of external air, the great destroyer of most productions of art. Perhaps also there is a peculiar nicety, in the degree of trituration of the rags, which hitting the medium between too much and too little, may contribute to the strength and goodness of paper. To ascertain this, if possible, by experiments, and to observe it in practice, should be the care of the attentive manufacturer. It is certain, that if trituration is continued until the material becomes greasy, it is too much.

It is also a matter of great importance, to attend particularly to the careful assortment, of the rags, with respect to firmness and fineness, so as to have the whole heap intended for each particular class or species of paper as nearly as possible of the same quality.

Some of the eminent *French* chymists, who have studied to make philosophy useful, by a practical application to arts and manufactures, have, as I have said, taught the use and importance of the muriatic acid, for deterging and whitening the rags for papers. It is said that
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late experiments in *France* have shown the practicability of clearing or whitening written and printed papers, and fitting them for being returned to the mill, as the material for white paper. This circumstance might deserve the attention and enquiries of the intelligent manufacturer. Much nicety and care are requisite with respect to the steeping, and fermentation of the rags, before they are subjected to the action of the mill; for if this operation is continued too long, and the fermentation and putrefaction become violent, the texture of the paper, to be made from the rags, will be proportionably weak. In this and other particulars, were the manufacture duly encouraged, and in a flourishing state, a considerable capital, and extensive experience, guided, by a degree of commercial vigour, and prudent enterprise, might make many experiments and improvements.

The ingenuity of manufacturers might discover many new objects, to which macerated linen might be applied. For instance, hats, and bonnets, for womens wear are formed of paper, which, for lightness, neatness, and durability, are not inferior, to those of straw, and chips. Perhaps also, paper of a peculiar texture, and greater aptitude for certain uses, (as, for instance, bank notes) might be formed by varying the material of paper, and employing silk or cotton, in the place of linen.

Though, not only the *English*, but the *French* and *Dutch* are our rivals, in this manufacture of paper; there is none, in which we have a fairer prospect of contending successfully, and equalling, if not surpassing our rivals. The *English* surpass us only in capital and skill; in all other respects, this country is the more advantageously circumstanced of the two, and it should inspire us with confidence, that our deficiencies are such as time and industry may cure.

The manufacture of hats is one, which particularly deserves the attention of the *Irish* nation, on many grounds. It is a manufacture of general use and prime necessity; little subject to the variations of fashion—it employs domestic produce—namely wool—or the fur of hares

and rabbits, exclusively, or mixed with beaver or filk, as the stuff which forms the texture of the hat. It is a species of industry, which may be carried on, by the manufacturer in his own habitation, at a distance from large cities.—The apparatus is not very complicated or costly; nor does it require any great weight of capital, to commence this manufacture—it is a manufacture generally established, and well understood in this country, though undoubtedly we are far inferior to the *British* workman.—With due encouragement, many improvements might be made, and the manufacture might be extended, to such a degree as to supersede the necessity of importing hats from other countries.

It may be said, that beaver fur, which, either in part, or in the whole, furnishes the texture of fine hats, is a *primum* imported from a far distant country, and of great price. Perhaps, a sufficient substitute for beaver fur might be found. Silk has of late been successfully employed in the fabrick of fine hats. Were the use of this material in hats to become general; great improvements, doubtless, might be made; both in the manner of preparing the filk, and in ascertaining the just proportion, in which it should be mixed with wool, or other materials, so as best to answer the purposes of beauty and durability.

But, as all manufactures are rather supported by the consumption of the populace, than by that of the rich and refined, the principal strength and utility of this fabrick must consist in the manufacture of the cheaper and coarser kind of hats, for the use of the multitude, in which every part of the materials (if we except the dying ingredients) is domestic. I am convinced, very great improvements might be made, in that kind of hats, called felts, which is composed entirely of wool, by improvements in the manner of preparing and dressing the stuff, of which the hat is wrought, and by due attention to the breed of sheep, so as to approach the fineness of *Spanish* wool; and by care in selecting and sorting the parcels of wool.

BOOK

* It seems to have been done in *England*, to evade the tax on hats.

B O O K II.

On the encouragement of Manufactures in Ireland.

Introduction.

IT remains to be enquired, by the pursuit of what, measures we may the most effectually avail ourselves of the natural advantages of the country, in the extension of industry, the improvement of manufactures and encrease of national prosperity.

The measures to be pursued, for the attainment of these great objects are of two kinds,—*general*, which apply to the advancement of all manufactures, without distinction, on comprehensive grounds of political economy; and *particular*, which apply in detail, to the production of some given fabrick.—Philosophy—agriculture—frugality—morals—education,—these are undoubtedly propitious, in the highest degree, to the extension and improvement of every form of national industry.—There are other general methods of promoting manufactures, which have, from time to time, been suggested by theorists, and are more questionable, in their principle, or more doubtful, in their operation,—such are chartered companies, monopolies, foundations, bounties and protecting duties.

I shall endeavour to consider, in their order, the means of promoting industry, and the arts in general, and the measures which may be advisable, for the improvement of particular manufactures. Some
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of these subjects I shall treat more at large, some, in a cursory manner; not so much regulating myself, by their intrinsic importance, as by the means of information I possess, or the leisure I may have found for considering them.

It may not be improper, in an essay of this kind, to premise, in one view, the general obstacles to the prosperity of trade and manufactures, in any country;—they are,

First,—war foreign or domestic.

Secondly, want of toleration, or persecution. Thus, the expulsion of the *Moors* gave a blow to the industry and prosperity of *Spain*, which the country feels, at this day. The revocation of the edict of *Nantz* was fatally injurious to the *French* nation—and the severity of the popery laws in this country, shackled and discouraged the industry of the Roman Catholics in *Ireland*, and drove many of them, to emigrate with their property.

Thirdly, laws indiscreetly meddling, and interfering, to confine, or vex the manufacturer, in his operations.—The excise laws, it is to be feared, do this in some instances, with respect to the manufactures of tobacco, and of malt, and with respect to the breweries, the distilleries, the manufactures of leather, and of salt.

Fourthly, taxes, that directly or indirectly check the consumption of a manufacture—as that on leather.

Fifthly, multiplied festivals, raising the value of the labour of the remaining days, and leading to excess.

Sixthly, prejudices respecting usury, tending to keep money out of circulation, to the disadvantage of the borrower.

Seventhly, luxury among manufacturers, consuming their capital, and cramping their operations.

Whether all or any of these prevail in this country, it is not for me to decide; suffice it to say, that where these evils do exist, the removal of them is the most effectual method of promoting industry.

In treating the subject of manufactures, it cannot be expected, that I should enter into minute details, of their different mechanical operations;

rations; these must be left to artists, by profession. It will prove sufficient, as I apprehend, for me, to suggest some general principles, and comprehensive views, which may, perhaps, deserve the notice of the legislature, and prove the means of exciting men of wealth and influence, to extend pecuniary aid, to the encouragement of industry and arts; and to employ the force of their authority and example, for the same salutary purpose. Much of the encouragement of manufactures must depend on the operations of moral causes, it would not be very difficult, to fill volumes, with minute details of mechanical operations, and with tables and calculations, which would have little influence on the main question. Man has been too much considered, as a mere machine, actuated only by physical impulses; and thus have most economical writers endeavoured to reduce his exertions, his value and political importance, to abstract calculations and arithmetical tables. Figures only expressing quantities can be applied only to objects, which are susceptible of addition and subtraction; but when numbers are employed, to calculate, with exactness national prosperity, when they are applied to develop the secrets of government, and the springs of human action, on which national industry and exertion depend, they lead to the most absurd consequences. It is much to be lamented, that politicians and legislators do not attend sufficiently to the force of moral causes.—The consideration of their operation and value, should, in particular, have great weight, with those who pretend to discuss the subject of rational industry.

C H A P. I.

On general methods, of promoting industry and arts, of unequivocal utility, and certainty in their Operations.

SECT. I.

Application of Philosophy and Science to Manufactures.

The improvements of mere manufacturers, in their respective departments, are generally suggested, at first, by accident. The discoveries which are presented, by chance, are seldom pushed on, in any consecutive order, or pursued up, through all the consequences of which they are capable. Thus, the experiments, of the practical mechanic, are too frequently unconnected facts, rather technical notices, than scientific data. Illiterate men, confined in their views, by want of education, dispirited in their aims, by want of encouragement, cannot be supposed to have the time, the means, or the disposition, to make deliberate, and regular experiments; but, supposing them to possess all these, they could not be expected, to make experiments with effect.

It is in the lap of opulence and encouragement, not, in the bosom of penury and despair, that we must expect to find the enlightened manufacturer—a *Clement Taylor*,—an *Onesiphorus Paul*—an *Arkwright*—or a *Wedgewood*.—Manufactures may be expected, to attain the most perfect maturity, when reason and philosophy, stooping to the purposes of common life, take the manufacturer by the hand, and lead him through
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the temple of science. Then, method is added to research, and principle to experiment. One discovery becomes the parent of another; and scientific truths and commercial advantages proceed, with equable march, and sisterly affection.—The construction of machinery; the chemical compositions and resolutions, on which depend the brightness and permanency of colours, in the art of dying; the relative durability and eligible qualities of materials, for the various purposes, of buildings and machinery; the properties of metals; the various preparations of various substances, which may answer one and the same end in manufacture; all these are disquisitions, in which, the light of science will serve to guide the artist, to superior excellence and superior wealth.

It were to be wished, that men of science, in this country, could be induced, to apply their researches to the improvement of manufactures. The *French*, with all their wild extravagance, are capable of affording useful lessons to the world, in many respects, and, in particular, as to the application of physical knowledge to practical purposes, even in the meanest manufactures; their public institutions, their dictionaries des arts, et metiers, the various elaborate articles in their *Encyclopedies*, may convince us, with what anxious care the learned men of *France* have pursued this important object; and how happily they have divested themselves, of the false pride, and mistaken dignity, that sometimes, lead the philosopher, to consider the humble, though nice, and important details of a manufacture as beneath his care.

There are what the vulgar call the secrets of manufactures: these are the niceties, to be observed in certain processes, the time of continuing certain operations; the mixture and proportion of ingredients; the preliminary preparation of materials; the greater or lesser intensity of heat; the form and capacity of utensils; the application of the mechanic powers; all these particulars may be learned, accidentally, at once; or be the result of frequent trials; but they are reduced to a certainty,

by philosophy, comparing a set of experiments, and generalizing principles.

We should endeavour, by every motive of reward and honour, to draw the man of science from his retreat; and lead him, to devote his talents, and researches, to the practical purposes of human life.

Geometry, duly applied, will contribute to compleat and perfect the mechanical arts; it will find the just proportions of things; and will ensure that precision of execution, in which, consists perfection. *Magellan* and *Drake* were, without doubt, great navigators, long before the true figure of the earth was ascertained; yet, the art of navigation has been brought to greater perfection; since geometry has discovered, that the earth is not a sphere, but a spheroid, and corrected our charts, according to that figure.

Naturalists may examine various substances of the animal, vegetable, and mineral kingdoms; and point out their use and application, in the cultivation of land, in the purposes of domestic life, in the construction of buildings, or machines, in the process of manufactures.—The naturalist, for instance, examining the nature, and properties, of wood and stone, may furnish aids to architecture, in the choice of materials, in the manner of working, and using them.

Philosophy, having established principles, and shown both the superior excellence, of one mechanical operation, or process, compared with another, and the reasons, and grounds, on which the superiority is founded;—*that* becomes general, and the fruit of design and forethought, which before was held to be casual, and the offspring of accident and luck. It can be demonstrated, that an arch of the catenarian curve is more strong, to support a superincumbent weight, than a circular one—an architect may, at first, adopt the catenarian curve, by accident; but finding, its properties demonstrated, by geometry, he will, afterwards, employ it uniformly, and on principle. Chemistry may discover secret modes, of producing stronger degrees of heat. A similar discovery may result from accident.

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In fact, the mathematician extends his aid to most of the practical objects of human industry. Terrestrial, and naval architecture invoke his hand; the farmer looks to him, for improvements, in the utensils of husbandry; every artisan and manufacturer expects, from him, machines, that will facilitate and abridge his labours; or enable him to perform his work, with more accuracy and perfection. Much, I am persuaded, might yet be done, by profound knowledge of mechanic powers, in the construction, both of spinning machines, and looms, for the amelioration, both of the thread and the web.

A member of this academy, who directs the researches of profound science, guided by distinguished talents, to the most useful objects, has shown how practical chemistry and philosophy may combine, to aid the husbandman, in the cultivation of his fields; by showing him the particular manure adapted to each peculiarity of soil. Chemistry takes the range of most arts and manufactures, and makes, in its circuit, some useful present to each. It taught the *French*, as I have before observed, to abridge the process of tanning leather, and to dispense with the use of bark, in that operation. It has improved the art of bleaching; it examines the philosophy of permanent colours; it explores the operations of fire, its power to fix or to transform; the causes and compositions of dyes and pigments; it furnishes the painter and the dyer, with new substances, of use in their respective arts; and teaches them, to prepare known substances, in a more cheap and commodious manner.

Near a century and half ago the process of dying, and the art of fixing colours, appeared to be of so much importance, that they engaged the attention of the Royal Society in *England*, who, properly impressed with the utility of the investigation, earnestly recommended these subjects, to the experimental philosophers of the time, *Boyle* and *Hook*. In *France*, *Colbert*, anxious to extend the commerce and manufactures of the country, turned his attention particularly to the art of dying; with a view to amend and improve the practice, as well

as to obviate frauds in it. For these purposes an "*Instruction generale pour la teinture des laines, et manufactures de laine, de toutes nuances et pour la culture de drogues ou ingredients qu'on emploie*,"—was prepared under his immediate direction, and published in 1672.—The result answered his cares. We see, to what perfection, particularly with respect to the dye, the woollen manufactures of *France* have attained.

From many substances to select the most useful; of many modes of performing the same mechanical or chemical operation, to prescribe the most eligible, is the province of the natural philosopher, or the chemist. To attain these ends, the government of a country, which wishes to thrive by arts and manufactures, ought to imitate what has been successfully practised in *France*. It should both offer rewards for particular discoveries and improvements, especially in the arts of dying and bleaching; and it should engage the man of science, by every possible incentive, to turn his attention to the manual arts.

Chemistry produces new substances, of use in manufactures. It develops the latent qualities of substances already known, and improves and heightens the known useful properties of known substances. It produces valuable substances, from the composition and resolution of new materials, of a more cheap and common kind, than that heretofore employed.

The industry and sagacity of the *French* nation were exerted in the present war, to discover the most sure and speedy mode of generating an abundant supply of salt-petre. The kingdom was divided into large districts, each of which was continually surveyed, by an inspector, skilful in arts and sciences. Under him was placed a former director of the national administration of saltpetre. It is stated, that sixteen millions of rough saltpetre were collected in one year. It was still necessary to refine saltpetre, for the purpose of making gun-powder. The former mode was too tedious and embarrassing, a new and more advantageous process, was invented by *Monsieur Carny*, which required
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less time, consumed less fire, disposed the saltpetre to dry, more readily, required less room, and occasioned less waste of salt-petre.

The process of making powder, was also abridged, and the strength of the powder was carried to a degree before unknown. New methods were practised, for mixing and triturating the ingredients, rendering the composition more compact, and granulating it. The machines, and mechanical means were also entirely new. What was on the spur of the occasion, with respect to a particular manufacture, requisite for the defence of the country, might be accomplished, in other branches of manufacture, by a like combination of philosophical science, with the exertions of active industry.

There are certain problems, which active industry may propound to philosophy; and, on the due solution of them, much of the success of manufactures may depend.

By what means may the machines and instruments of the husbandman and farmer, the machinery and tools, employed in manufactures, be improved; either to save labour, or to perform the task, in a more perfect manner? To what operations of farming, and manufacture, which are now performed, by the mere labour of the hand, might the mechanic powers be successfully adapted?—What useful inventions, or practices can the observation of travellers supply, for the improvement of husbandry, and the arts;—to raise water—to irrigate lands, for instance?—Steam is an all-powerful agent; may not the use of it be extended, in manufactures?—In a brewery, the same engine may raise sacks into the ware-house—grind the malt, pump-water, for the use of the brewer, tun the liquor, and turn out the casks, from the ware-house. It may be employed to work bellows, in great founderies.—Industry has to enquire of chemistry,—if certain impediments may not be removed, by her aid; for example—whether an effectual substitute for charcoal, may be found in charred peat—whether coak may be made, of turf, for the purpose of smelting iron, when coak of pit-coal cannot be had,—the relative heats of charcoal, coak of pit-coal, and charred turf,—expedients for producing an intense heat, in glass houses, and
furnaces,

furnaces, with a smaller quantity of fuel,—the force and application of pure air,—the properties and application of various other airs, in manufacture,—the use of manganese, and in what parts of the kingdom it may be found. Finally, science and philosophy should be invited, to take a comprehensive view of arts and manufactures, and to institute experimental enquiries, how the process, in each, might be shortened or simplified! How time and labour might be abridged,—how the expence of fuel might be diminished,—how the quantity of room, the extent of buildings, the complexity of apparatus requisite, at present, in the various operations of manufacture, may be contracted.

Vegetable alkaline salt is a material of prime importance, in the manufacture of soap, and in the process of many other manufactures; chemistry, analysing and comparing many vegetable substances, discovers, that wormwood yields the largest proportion of this salt. The farmer, under the direction of the chemist, and with the encouragement of the legislator, might be led, to cultivate extensively this useful vegetable, and taught to prepare the salt; and thus, large sums of money, which are now annually drawn off the country, for the purchase of *barilla*, might be retained at home.

No department of public utility, has been left unexplored, by science, in *France*. Under the direction of chemistry, a grand project was conceived, and has been executed to a considerable extent,—a subterranean mineralogical survey of the country, accompanied with subterranean maps or charts, illustrating the nature of the soil, and the mineral productions of the several districts. It is easy to see the importance of such surveys to medicine, to manufactures, and to agriculture.

Above all things, it would be of the utmost national utility, to turn the attention of philosophy, and direct the spirit of active research, to the discovery of that subterranean wealth, which, no doubt, is copiously stored, in the recesses of the earth; and particularly to the discovery

covery of mines of coal. Since every step towards the providing of a cheap, certain, and abundant supply of fuel, will be the greatest advance imaginable, towards the improvement of the country. To this great end, the mineralogical survey of such parts of the country, as seem, from their aspect, to promise metallic and fossile substances, should be directed.

The researches of the naturalists might discover a variety of valuable substances, in this country; *Ireland* is, by no means, deficient in minerals. An abundant source of wealth and prosperity, to a country; and a copious field of employment, for the labouring poor, are opened to us, in the pursuit of those treasures, which lie concealed in the earth. Yet, though mining speculations are highly profitable to the adventurers, and advantageous to the country, if undertaken with judgment; there are none, where projectors, of a sanguine temper, have more room, for flattering themselves to the last, or, where people are more liable to imposition, both, from others, and from their own hopes and imaginations. Here, natural science, and experiments in chemistry, must direct the researches and expectations of the projector; or they will end in disappointment and ruin.

It would be a measure of great national utility, were able mineralogists sent, at the public expence, through the country, to examine its mineral productions; their quality, and the facility or difficulty of obtaining them; with other particulars, of that kind, proper to guide the exertions of industry; and instructed, to combine their several discoveries, in something like a subterranean chart of the whole island.

By this means, we should, not only be enabled, to discover different metals, and mines of coal and culm; but ochres, and other substances, of use to painters and dyers.—Pipe-clay, and fuller's-earth are substances, of such importance, in the woollen manufacture, that they cannot be sought for, with too much diligence; and the industry of naturalists should be stimulated, by rewards, to discover veins of these substances.

To

To this head, I may, properly enough, refer the arts of drawing and designing; which are of the utmost importance, in many trades, and manufactures where the exterior forms and embellishments of things, are often more considered, than the material or substance. *France* and *Flanders* would never have drawn so much money from *England*, for figured silks, damask linen, lace, and tapestry; had they not improved these manufactures, by their academies for design. We are told by *Young*,* that taste was cultivated by the manufacturers of *Lyons*, with so much attention, that they employed more than an hundred pattern drawers, whose invention was ever on the stretch. Had we academies for design, with a particular reference and application to the different mechanical arts, and manufactures, which admit of ornament, and a display of taste; it would contribute very much to the perfection of a variety of fabricks, which are produced in this country—an institution of this kind, particularly calculated for the use of manufacturers, and directed to their improvement, might easily be engrafted, on the drawing school, which now subsists, under the patronage of the Dublin Society. Our manufactures of figured silks, our stamped and painted linens, cottons, and calicoes, our damask table-linen diapers, our paper hangings, our cabinet-makers work, and ornaments in stucco, would soon confess the beneficial effects of such an establishment, by the superior elegance of design.

SECT.

* *Young's Tour in France.*

SECT. 2.

On the Abundance of Provisions, and Agriculture.

I cannot forbear recommending, in the strongest terms, the encouragement of agriculture, as one of the means, of encouraging and promoting all the manufactures of the country. In the first place, it is a prime object, to secure to the manufacturer, an abundance of the best provisions, on the cheapest terms; and, for the attainment of this end, we must look to agriculture. Were I to enlarge on this topic, as its importance deserves, I should far exceed the bounds allotted to this paper. In the next place, it is to be observed; that we must look to the husbandman, and the shepherd, for the raw materials of our most important manufactures. The former supplies us with flax and hemp; the latter with wool. An abundant supply of food, for our manufacturers, is also offered by fisheries, which may be carried on, with great advantage, from all the shores of this kingdom. Every encouragement, therefore, which is given directly, to agriculture and fisheries, by encreasing the supply, and diminishing the price of food, is indirectly an encouragement to every branch of manufacture.

The alarming prospects of famine, to which this, and the neighbouring country, were lately exposed; should lead us, to the adoption of some measures, which might, if possible, deliver us from the apprehensions of such a national visitation, in future. Might it not be prudent, to establish public granaries, one in each county; where grain of all kinds might be stored up, when the market price should be low, for the purpose of being sold out to the poor, in times of scarcity; at a rate somewhat enhanced, so as to pay the interest of the first cost, and the charge of management. These depots might be so re-

gulated, as not to be opened for sale, of any particular kind of grain, until it should have risen in the markets adjoining, to a certain average price. What the buying and selling prices, for each species of grain, ought to be, I shall not attempt to ascertain, in this place.

Such an institution would be of the utmost utility, to the manufacturer, by securing for him an unfailing supply of bread, at a reasonable rate; and it would prove a great encouragement to agriculture, by securing to the husbandman, in times of great abundance, a regular home market for the produce, much more certain than the foreign demand. The late large exports of grain, from this country, are not to be depended on, as what will prove permanent; they proceeded from temporary causes, affecting other parts of *Europe*; when these causes no longer operate, the great demand for the grain of *Ireland* may cease; yet, our farmers have speculated on its continuance; and are likely to suffer disappointments, which may discourage the agriculture of a future season. Were public granaries established, this never could be the case; the leannefs of one year, would eat up the superfluous fatnefs of another; the market would be regular, and keep the demand, and price of corn, nearly at one reasonable and uniform level.

The expediency of establishing granaries has been felt, in most countries, ancient and modern. By repositories properly constructed, grain, may be preserved, for a long space of time, as appears in the successful practice of *America*. Thus, the superabundance of one year balances the sterility of another; and, should the accumulation of grain greatly exceed the present consumption, or probable wants of the country, a vent may easily be found, in some foreign market.

There is another point of view, in which, the encouragement of agriculture, and fisheries, is of great importance, to the manufactures of a country; and must be considered, as affording them a bounty.—I mean, that the encrease of these, by encreasing the opulence of the labouring classes, encreases their consumption, in the same ratio. In proportion, as the peasantry of a country become wealthy, their artificial wants will encrease; they will be better clothed, and lodged, their
habitations

habitations will be better furnished. A rich merchant, as he accumulates money, thinks of acquiring landed property; a peasant, as he accumulates part of his daily earnings, thinks of acquiring various utensils, and articles of household furniture, which he wanted before, or of purchasing superfluous wearing apparel; and this, to him, is realizing a property. It is easy to see, how this contributes to the improvement of manufactures. It is unnecessary, to enlarge on this subject; suffice it to say, that the constant and general consumption of the poor, contributes more to the support of home manufactures, than all the capricious and wanton luxury of the rich.

As a measure connected with agriculture, and abundance of provisions, I would recommend the enclosure, and division of commons, in this country.—To encourage the cultivation of the waste and mountainous, parts, I would propose to colonize them. This measure would be equally profitable, to the private proprietor, and to the community at large; sterility of soil vanishes, before industry; we see this exemplified, in the mountains of *Switzerland*. We see how the *United Netherlands* emerged from the bosom of the waters.

There is a measure, which, though, at first view, it may appear chimerical and visionary, like some of the preceding plans; would, I am confident, be found practicable, in the execution, and profitable in the effect,—the colonization of the waste and uncultivated parts of the country. There are vast tracts of mountain and morasses, at present, unprofitable to the private owner, and to the public at large, which might be rendered valuable and productive land.—That many of these tracts were formerly inhabited and cultivated, appears, from the remains of houses, and places of worship, and from the marks of the plough, which may be traced out, in places, now deserted, wild, and waste. Poverty of soil, and disadvantage of situation would yield, to the industry of man, freely, and of course, cheerfully labouring, with a certain prospect of advantage, to himself. We see this exemplified, as I have said, among the *Swiss* peasants; and in the *Dutch Netherlands*. The sad reverse is exhibited by *Egypt*, in its present

present state; what was formerly the most fruitful part of that country, when watered by numerous canals, and won, or preserved, by the hand of wakeful industry, from the encroachments of the shifting desert, has now degenerated into a sandy waste. Our bogs might, in general, be drained, and rendered highly profitable, by crops of rape, hemp, and kale. A great part of our mountains would maintain a small breed of sheep; whose wool approaches near to that of *Spain*, in the fineness of staple; and the increase of whose numbers would tend highly to the extension and improvement of the woollen manufacture.

Large tracts of mountain undoubtedly there are, so bleak in the exposure, and so savage and intractable in their nature, as to mock every meliorating art, every attempt at cultivation; but, by far the greatest part of our mountains is capable of being made useful. It is impossible for those, who have not seen it experimentally illustrated, to conceive, what may be effected, by the exertions of industry. This may be seen, in a striking manner, in the late accounts of *China*, that wonderful country; where not a plant or herb springs up in vain, or is past over in neglect; where even the waste of waters, is covered with the dwellings of man, and compelled to produce esculent vegetables, for his support. It is observable, that the wool of cold countries, is the finest; of *Cachemire*, for instance, and *Caramania*.

Suppose companies were formed, with the design of reclaiming and peopling, the deserted parts of the kingdom; and of establishing villages and markets, in regions, which are now uninhabited. The undertakers might divide the land, in shares, amongst industrious peasants, who should enjoy their respective allotments, during seven years, free from rent, tithes, or taxes, and subject only to a very small chief rent, during two lives, on condition of building a cottage, and residing on the premises. Thus, would the cultivation of the country be improved, and the proprietors, at the expiration of the terms granted, would be able to derive a large income, from lands, which, at present,
yield,

yield little or no profit. Had some such measure been adopted, some some years ago, it might have proved the means, of retaining, in this country; large sums of money, and what is of more importance, multitudes of active and industrious individuals, who have fled from this island, with their families, and their property, to cultivate and enrich, the wilds of *America*. But measures of this nature must be left, to the prudential or patriotic consideration, of individuals. They cannot become an object of legislative interference. I shall only observe, that, to render the remote, mountainous parts of the kingdom productive, they must be made accessible, and intersected with roads, the want of which contributes very much to retard the progress of civilization, and industry, in *Ireland*.

SECT. 3.

Of Frugality, with a Glance at the Prodigality of Ireland.

In considering the means, of advancing the prosperity of manufactures, frugality, and correctness, and simplicity of manners present themselves, in the foremost rank. Frugality is the nursing parent of all the exertions of industry.

The real wealth of a nation is in proportion, not to the gross, but to the net revenue, *i. e.* to what remains, after deducting the expence, of maintaining, first, the fixed, secondly, the circulating capital. If a nation is frugal, and makes the general expences, less than the nett revenue, the overplus goes to the augmentation of capital; and, in proportion as it is increased, the productive powers of labour are increased. Improved machinery, improved materials, a greater number of hands, must be the consequence; all that is laid out, on the fixed capital,

capital, is repaid, with very great profit, and encreases the annual produce, by a much greater value, than that of the support, which such improvement requires.

“The true and natural grounds of trade and riches,” says *Sir William Temple*,* “is the number of people, in proportion, to the compass of ground they inhabit; this makes all things, necessary to life, dear, and forces men to industry and parsimony. These customs, which grow, at first, from necessity, come with time, to be habitual to a country; and, wherever they are so, that country must grow great, in traffic and riches, if not disturbed by accidents.”†—“By selling more in proportion, than they bought, the *English* were rich, in comparison of their neighbours. In *Edward the Third's* time, when *England* maintained such mighty wars, in *France*, and carried her victorious arms into the heart of *Spain*,—in the 28th of that reign, the value of all exported commodities amounted to 294184*l.* 17*s.* 2*d.* that of imported, but to 38,970*l.* 3*s.* 6*d.* So there entered, that year, into the kingdom, in coin or bullion, or else grew a debt to the nation, 255,214*l.* 13*s.* 8*d.* Yet, they then carried out our wool unwrought, and brought in a great part of the cloathing of the people from *Flanders*.”

Parsimony is, not only serviceable to industry directly, in the quantity of productive labour it employs; it contributes not less to foreign commerce, than to domestic exertion. The less that is consumed, in a country, the more is exported abroad; they will, most readily, find a market, who can afford to sell cheapest. The industrious and parsimonious people can thrive, by prices, by which the lazy and expensive cannot live. It is a mistake, that the importation of luxuries, which are not purchased with money, but with native commodities, does not make a nation poorer. The native commodities, if they had not been expended, in the purchase of luxuries, would have reproduced

* Vol. 3, page 6.

† Vol. 1, page 197.

duced themselves, with a profit; which return, again, would reproduce itself, with profit, *in infinitum*.—This return would have been made either in money, or in the crude materials of some manufacture. Never any country studied parsimony so much as *Holland*, and consumed so little; the *Dutch* furnish infinite materials to luxury, which they never practise; and traffic in pleasures, which they never taste.

There is no country, in which the lesson of frugality should be more strongly inculcated, than in *Ireland*; since, there is no country, to which habits of parsimony are more requisite, than one, which supports an incessant drain, in the sums perpetually extracted from her, by absences,* and a variety of other powerful exhausting causes. In fact, *Ireland* has been so long in a dependent state, that her ruling principle is the servile spirit of imitation; her arts, her notions, her fashions, her luxuries, her vices, are all imported, idleness and drunkenness excepted; these, indeed, are the native growth of the soil. She attempts, in every particular, to exhibit a poor caricature, a feeble imitation of what is done in *England*, a country advanced a century, at least, before this, in true refinement and knowledge; and exceeding us, beyond all comparison, in industry, arts, and opulence.

The disproportionate expence, in superfluities, diffuses a system of splendid mendicity, and bankruptcy, through this island; the sums, which should be added, to the capital of the merchant, or employed by the proprietor of the soil, in the improvement of his estate, and the diffusion of industry, are dissipated in gaming, or lavished, in the expenses of the table. The buildings, both public and private, (especially in the capital) are on a scale, vastly too large, for the means of the country, and of the individual. We see the mansions of private gentlemen abandoned, and the capital swelling to a preternatural and pernicious magnitude; the estates, of land-owners, groaning under a weight of debts, and among traders and manufacturers, prodigality and ruin the order of the day.

* The annual sum, drawn from Ireland, by her absenteers, is about two millions of money.

SECT. 4.

Subject of the Prodigality of Ireland continued.

All *Ireland* is, in some degree, in the situation of a great capital, practising a luxury beyond its means, and exhibiting the varieties of unproductive labour. Its principal trade is the importation of foreign luxuries, and the drain, which this disadvantageous traffic, and a numerous band of absentees occasion is only supported, by the exuberant productions, of a most fertile soil, and the solitary aid of the linen manufacture. There are few countries, of the same size and population, where so many idlers are fed, with the bread of the industrious.

Smith has remarked, that none of the parliament towns, of *France*, *Rouen*, and *Bourdeaux* excepted, carried on any trade or manufacture. The same, with a few exceptions, may be said, of our county-towns; and, where these exceptions prevail, they may be accounted for, as in the case of *Rouen* and *Bourdeaux*, from local circumstances. *Smith* explains the phenomenon, on the principle, that the proportion between capital, and revenue, every where seems to regulate the proportion between industry and idleness; wherever capital predominates, industry prevails; wherever revenue has the superiority, the consequence is idleness. Every increase or diminution of capital naturally tends, to increase or diminish the real quantity of industry, the number of productive hands—the exchangeable value of the annual produce of the country. The riches, and as far as power depends on riches, the power of every country must be, in proportion, to the value of its annual

annual produce ; the fund, from which all taxes must ultimately be paid—but this annual produce must be, in proportion to the capital to be employed.

Capital in *England*, is great, in proportion to revenue ; in *Ireland*, revenue is enormously great, in proportion to capital. The number of unproductive hands, in this country is swelled by the operation of various causes. This island has all the forms of a distinct regal government ; a court ; and a civil establishment ; to this we may add, a large pension list. The collection of the revenue, managed in a most expensive way, feeds a swarm of unproductive people ; add to this, an immense military force, and ecclesiastical establishments, vastly too great for the means, and population of the country. The different sects, and various forms of worship, that prevail in *Ireland*, augment the number of ministers of religion, in a threefold or fourfold proportion ; for there is scarce a parish in the kingdom, which has not, in addition to the clergyman of the established church, its dissenting minister, or pastor, and Roman Catholic priest. The number of persons, who derive a subsistence, from the administration of justice, and the practice of the law, judges, officers of the courts, door-keepers, tipstaffs, barristers, and attornies, form a very numerous body ; and many of them accumulate great wealth, and become the most opulent part of the community. Consider, also, the unnecessary crowds of domestic servants, which are retained, and pampered, in *Ireland*, in idleness, and insolence, not for use, but show ; and the numbers of those noxious vermin, half-gentry, the spawn of land-jobbers, the peculiar pest of *Ireland* ; and you will perceive, that the exertions of the man of letters, and the artist, are the only kinds of unproductive labour, in which we do not abound.

Prodigality is the prevailing disposition of the *Irish* ; their apparel, their houses, their attendants, their tables, their equipages, all are in a style, respectively beyond their means. This, too generally begins, with the higher orders ; and goes on, in a regularly graduated scale, down to the lowest classes. Every one aspires to a rank, above his

own, and presses on the class beyond him, aping its manners, and vying with it, in dissipation. The country squire, tired of cultivating his demesne, and leading the life of unassuming ease and plenty, that his ancestors led before him; mortgages part of his estate, buys a seat in parliament; like a true Sir *Francis Wronghead*,* brings his family on the pave of *Dublin*; rigs himself out, in clumsy finery, and second-hand airs; haunts levees, like a ghost; besieges the doors of secretaries, and under-secretaries, like a catch-pole; and thinks himself well rewarded, with a place of five hundred a year, during the continuance of his parliamentary being.—Foolish man! he never stops, to consider, that the sum paid for his return for a borough, together, with what he might have accumulated by economy, and decent frugality, would have purchased the fee-simple, of an income as great, as that, for which he sacrifices his independence, his quiet, his character, and the morals of his family.

It must be confessed, and lamented; that, although *Ireland* has increased enormously in luxury, and expence of living, in equipages, houses, and furniture; literature and the fine arts seem to have declined, among us. At least, our rapid strides, in pursuit of unmeaning and criminal luxury, render our deficiency in taste, and our general ignorance, the more glaring and offensive.—Formerly, we had a respectable exhibition of pictures—a permanent public concert—a private music meeting, on a grand scale—these innocent luxuries are no more. We had, two theatres, and excellent players, now, we have one, and—it is gilt and painted.

What does the merchant or shop-keeper?—He commences business, with, perhaps, two thousand pounds, which, (such is the scarcity of money, in this country) is considered, as a handsome capital. The whole, or most part, of this capital he expends, on the fine of a large house, and on furniture. His stock in trade, he obtains, on credit.

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* The reader will see, that this essay was written, while Ireland had yet a parliament.

He keeps a pair of hunters, and a harlot. He indulges himself, in all the pleasures of the table. He frequents the gaming house. In short, he lives in the style of a man, who had already acquired an ample fortune. He flatters himself, that, by frequent entertainments, and conviviality, he shall acquire friends, and form useful connexions.—His credit totters,—he gets a wife, with some money; this wards off the evil day, for a season, only to return with greater certainty; for the wife is not less extravagant than the husband.—The man becomes a bankrupt; pays two and sixpence in the pound; and is happy, if, he can become a tide-waiter, a gauger, a hearth-money collector, or an ensign of militia. He dies, and leaves a race of idle, uneducated beggars, to burthen the community. Such is the history of many a merchant, and master manufacturer, in *Ireland*.

Squires, without estate; merchants and tradesmen, without capital; artisans, without morals, or industry, are vermin, more noxious than any that *St. Patrick* is fabled, to have expelled from *Ireland*; and unhappily, they abound too much in this country.

From a view of the habitations, furniture, and equipages, of the gentry; and of the houses, shops, and manner of living, of the merchants, and traders; a stranger might be induced, to suppose the opulence, and resources of the country greater, than, in truth, they are: And, I am convinced, that from hence, the means of the country have been falsely estimated.

A very brief examination will convince the judicious observer, that this appearance of opulence, in the overgrown, and disproportionate metropolis of the country, is false and hollow, like the feeble corpulency of a relaxed and diseased body. When he recollects, that the gentry flaunt, in unpaid-for splendor; that the merchant fills his warehouse with unpaid-for goods; he will not wonder, at the rapid succession of bankruptcies; at the ephemeral generations, of decorated shops and

warehouses, eternally opening, and shutting, in our streets, like gaudy flowers.

It may be said, that luxury, in houses, dress, and furniture, encourages manufactures, and circulates money. Quite the reverse; many of the articles of luxury are imported; and from those, which are the produce of the country, small benefit is derived, to the industrious manufacturer. Indeed, more frequently, distress and ruin are the result to him; as many of the articles of luxury, which are consumed by the prodigal, under a specious outside of opulence and credit, commonly remain unpaid for, to the total destruction of the industrious poor, that furnish them. On the bankruptcy, of a vain, luxurious merchant or tradesman, the stroke of calamity is communicated, by a fatal chain of magnetism, through a long gradation of traders and mechanics.

Prodigality not only prevails in *Ireland*, but it is a prodigality the meanest, in its pursuits, the most pernicious in its influence. “The revenue of the individual,” says *Smith*, “may be spent in things, which are consumed immediately, in which, one day’s expence can not alleviate that of another; or in things which are durable, and may be accumulated.—Thus, a man of fortune may spend his income, on a sumptuous table, a number of menials, a multitude of dogs and horses;—or, contenting himself with a frugal table, and few attendants, may lay out the greatest part, in buildings, furniture, books, pictures, statues, trinkets, clothes. The magnificence of him, whose expence is in durable commodities, daily encreases; that of the other, is no greater at the end, than the beginning. The former, too, is the richer man at the end; he has a stock of goods, of some kind or other; there is no trace remaining, of the expence of the latter; and as the mode of expence, which accumulates or is laid out, in durable things, is more favourable, to the opulence of the individual, than that which dissipates, so, is it, likewise, to that of the nation. The houses, the furniture, the clothes of the rich become useful, to the inferior and middle ranks.

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“ The expence, in durable things, is favourable, not only to accumulation, but even, in some degree, to frugality.”

It is plain, that the expence of the upper classes, and of those who ape the upper classes, in *Ireland*, is an expence in consumable things, an expence, which dissipates, in a sumptuous table, in a number of menials, in a multitude of dogs and horses;—which leaves no trace of good behind. Meanwhile, the arts are little cultivated; such artists, and men of genius as the country produces, (notwithstanding the countenance of a few, who hold out, a bright example, but in vain, to the men of rank and fortune, in *Ireland*) are driven, by the meagre encouragement, which their native soil affords, to emigrate, for daily bread.—Even those arts, which minister to the more refined pleasures, and elegant luxuries; at how low, how deplorable an ebb, are they among us!

It may be said; this evil is sensibly felt by many, and must be lamented by all; but how is it to be remedied? The advantages of frugality are universally acknowledged, in theory; it is unnecessary to dwell on them; but, how shall the manners of the people be reformed? “ How shall frugality be enforced, in practice?—Sumptuary laws are, considered, as inconsistent with freedom, and unfriendly to trade. The only sumptuary law, consistent with our ideas and constitution, and with the present state of society, in these countries, is the law, in the breast of each individual, disposing him to regularity of conduct, and to the setting of an example of sobriety, prudence, and frugality, to his neighbour.”—Despondence is the bane of improvement,—much might be done, in various ways;—taxes might be laid, on superfluities and luxuries; on the false necessities of life, which are only necessities, to the rich, the profligate, the voluptuous, and the idle; on equipages, dogs, and horses for pleasure; on wine, and spirits; on the instruments of gaming, cards and dice; on all the imported paraphernalia of fashion, particularly man and woman’s mercery; on millinery, perfumery, cosmetics, and the long catalogue of female fripperies. All these articles
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are more or less taxed, at present; but, I would impose an additional tax, so heavy, on the most of them, as should effectually restrain their immoderate use. Such taxes must still be paid, by the rich and dissipated; and they would prove salutary admonitions, to the lower orders of the community.

Still more might be done, were gentlemen of large property, and extensive influence; to exert themselves, among their neighbours and dependents; to promote a spirit of sobriety, good conduct, and economy; and were they to employ the sums, which are now lavished, in useless and pernicious expences, and vain magnificence, on the true magnificence of virtue, the magnificence of encouraging industry, and promoting useful undertakings. Were persons of rank and fortune, not too proud, or too indolent, to visit the humble habitations, and enquire into the little interests of the neglected beings, whose poverty and toil bring luxury, and ease to them; and who, in silence, contempt, and misery, wear themselves out, while they build the fabric of national prosperity; we should soon see a material change in the sentiments and conduct of those people. In addition, to instruction and reproof, where necessary; and praise and reward where deserved; the most powerful of all lessons, the lesson of example, should be added, in a strict performance of the duties of religion and morality. Those, who have exerted themselves, in the divine task, of reforming and assisting the poor, in their respective neighbourhoods, can assure us, that their seed has not been cast on stoney ground; nor yet, has it fallen, by the way side, for such merit is not common, or obvious. Some distinguished characters, in the neighbouring island, have exerted themselves much, in the encouragement of industry; and their example begins to operate in *Ireland*.

Gaming is a vice fatally prevalent, through all classes of people, in this country. This unhappy propensity being so general; it is much to be lamented, that the government of *Ireland* is obliged, by the exigencies of the country, to feed this canker of the state, and resort
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to an annual lottery, for supply. Wherever you turn, in the vicinity of *Dublin*, you meet the villas and equipages of the obscene and dirty harpies, who have kept lottery offices, and enriched themselves, with the plunder of the poor. In every street, the shops of vice and perdition are announced, by festive illuminations, and pompous inscriptions.—The *Government Lottery Office, as by Law established*.—The *Military Lottery Office*.—The *Lion's Office*.—*Good Luck at Home*.—The *Repository of Cræsus*.—The *Temple of Fortune*.—See what squalid, famished throngs, are vomited forth from yon splendid saloon! It is a lottery office.—What multitudes of infatuated creatures croud these receptacles of folly and despair, forgetful of their families, and their country, relinquishing the means of honest subsistence, dissipating the property, which is not their own; and qualifying themselves, for an untimely end, by the sword of avenging justice.—Merciful God! all this is done, not only with the connivance, but even under the sanction of government! Individuals, who minister, for hire, to the depravity, and vices of mankind are deservedly branded with infamy, and become objects of contempt; but, what shall we say of the system of finance, which panders for the corruption of individuals, and endeavours to deprave the morals of the people, that it may make their very vices a source of revenue!

Ireland has been fated to suffer, not from prodigality alone, but, also, from misconduct. Almost all her schemes and speculations, the linen manufacture, excepted, have been misconceived, misconducted, and consequently, in some measure, have proved abortive. They have too frequently originated in ignorance, and misrepresentation, been carried on, by the very genius of speculation, prodigality, and incapacity; and ended, in disappointment, bankruptcy, and shame. The commercial history of *Ireland*, (says *Young*) is but the history of jobs; turn over the Journals of the House of Commons, for notices of canals, ports, piers, fisheries, mines, and manufactures; and you will find party spirit, eager rapacity, and unblushing knavery, going hand in hand, with

with honest credulity, and sanguine incapacity. The sums, lavished in this manner, would have been enough, with proper application, to have placed the manufactures of *Ireland*, on a footing of the highest respectability.

Is any public work to be carried on, in *Ireland*?—It is begun,—blundered,—deserted,—recommenced,—altered,—reformed, and, after many delays and interruptions, ill executed, at tenfold the expence, it would have cost a private individual.—Happy for the public, if, at last, it is found to answer any one end, but that of enriching projectors and contractors.

There is a certain character, of moderation and frugality, necessary to the success of commercial and manufacturing undertakings, especially in their infancy. A late writer, (*Faujas St. Fond* vol. 1. p. 136,) observes, on this head, with much good sense, “ this modest simplicity is of great advantage to the country : it encourages active and industrious men, to embark in trade, who would, otherwise, be unwilling to form large establishments, being deterred, by the expences which extensive works require, when executed on a magnificent scale.

“ It is a taste for pomp and grandeur, which, almost always ruins the manufactures of *France*, and prevents those new ones, which we want ;—men are afraid to involve themselves in ruinous expence, for mere warehouses and workshops.

“ It must be acknowledged, that the *English* and *Dutch* are much more prudent, and exhibit examples, in this way, which we ought to imitate.”—This observation applies, with some force, to *Ireland*, where, instead of beginning new manufactures, and experimental undertakings, in an humble and unambitious manner, where the magnitude of the apparatus, the works and buildings, should be contracted, in proportion as the prospect of success is doubtful, and, leaving some fund in reserve, to meet unforeseen losses, from chance or ignorance ;—the chief part of the capital is sunk at once, in parading and expensive works, stores, and other buildings ; and the consequence is, that the
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first miscarriage, through fire, or mistaken experiment, is ruin and bankruptcy.

SECT. 4.

Of removing Manufactures from the Capital.

I cannot prescribe any thing more efficacious, or immediate, for the interest of the manufacturer, than his removal from the dissipation and vices of a large city, which, joined to the impure air, relax and debilitate his frame, while they corrupt his mind. In rural situations, provision is made, for a long life, an healthful progeny, and vigorous old age. The manufacturer inhales a purer gale; and counteracts the fatal effects, of a sedentary trade, by an intermixture of rustic labours, in his garden, or his farm; at the same time, the temptations to riot, intemperance, and other kinds of misconduct, to which manufacturers, in great cities, are but too prone, are set at a distance.

I cannot, therefore, subscribe, to the opinion, that manufactures may be carried on, to more advantage, in large cities, and towns. *Young*, who defends this notion, says that agriculture is a loser, by the contrary practice; and dwells particularly, on the low state of agriculture, in the manufacturing counties, in the north of *Ireland*, where, as he asserts, the land is worse cultivated, than in any other part of the kingdom. He adds, that, the case is the same, in the manufacturing districts of *France*, where the same persons attempt to unite, the characters of farmer and manufacturer; so incompatible in his judgment.

The consequence of a removal of the manufacturer, into the country, must necessarily be a division of large farms, into small ones; this, also, is strongly reprobated, by *Young*, but here, as on some other occasions, he will be found, to disagree with himself. It is admitted,

by all political writers, that, whatsoever contributes to the encrease of population, must, on trial, have been found conducive, to the prosperity of the country. The encrease of population is, in fact, made by them, a criterion of encreasing prosperity. What, says *Young*? “the great populousness of *France*, I attribute, very much, to the division of lands, into small properties, of which, in *England*, we have no conception.”

Young is for keeping the characters of farmer and manufacturer, wholly distinct. Yet, he admits, that industry is very generally diffused through *France*, where the contrary practice is established; and that the culture of flax and hemp, for home use, pervades every part of the country. National prosperity, being the united prosperity of individuals; if any particular form of industry is beneficial, to all the individuals separately, it cannot fail of being advantageous to the nation. It cannot fail of being beneficial, to a poor man's family, to have the women and children industriously employed, in cloathing the whole, rather than to be obliged to buy such articles, at an expence, which many of them not being able to afford, they must either abridge themselves of other comforts, or be satisfied, to want the articles in question. By industry thus exerted, a poor family is rendered as independent, as its situation will admit. All of them, likewise, are warmer, and better cloathed, as far as linen and woollen are concerned, than if these matters were to be bought: for things that demand money, will be consumed, with more caution, than what is merely the result of labour. Thus, as I approve of making the manufacturer a farmer, so, I approve also of making the farmer a manufacturer.

Though *Young* contends for the propriety, of confining manufacturers to large towns, and quotes, in his favour, the example of *England*; he admits, that great luxury prevails, among the labouring poor of that country. The obvious cause of this, must be, their living in large towns; and to this same cause, must we chiefly ascribe the alarm-

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ming depopulation of the island, an evil, which has kept pace with the growth, and prosperity of trade, and manufactures; and now advances with such rapid strides, that it threatens to annihilate them, in the end. *Young*,* in his account of *Lyons*, gives a picture of the condition of manufacturers, in large towns; which, I think, is a full refutation of his own doctrine. “No people work longer, or fare harder, than the “manufacturers of *Lyons*; they rise before the sun; and work till “late at night, yet they continue poor; they *laßt*,” (note the expression) “but for three generations; the first is feeble; the second diseased; the third never comes to maturity, unless transplanted!”

An enlightened legislator, when he considers the state of the manufacturing poor, will not view them, in the light of mere machines, or consider, only, by what means they may be brought to produce, the greatest possible quantity of a certain fabric. He will find himself invested, with the important office, of consulting the health, the peace, the morals, the happiness, both present and future, of this most useful part of the community; and I am sure, all these may be promoted more effectually, by placing the manufacturers, in the country, and giving them small farms, than by crowding them together, in large and populous cities, alike the graves of the human species, and of morality; where the physical and mental atmospheres are equally impure, and general intercourse is general infection.—With examples of vice ever before them, the poor are trained, by prevailing dissipation; they see riches squandered, on a variety of enjoyments, to which they must not be admitted. Their peace is embittered. Their souls are filled with envy, at the sight of various gratifications of luxury, which are set far, far beyond their reach. On the other hand, many of the subordinate and baser gratifications of appetite, are ever near,

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and

* *Young's Tour in France.*

and powerfully stimulate them, to all kinds of intemperance, and excess.—Where manufacturers are crowded together, in towns, and can be assembled, at a call; unlawful meetings, riots, and combinations are the certain consequences. All these mischiefs are aggravated, when famine, with inevitable and sweeping gripe, pounces on an aggregated mass of manufacturers, cooped up, and squeezed together, in a city. All this appears, just in theory; and, to confirm this theory, we see, that the linen manufacture, the only flourishing manufacture, in this country, and one of the most flourishing manufactures, ever carried on, in any nation, is managed by manufacturers, widely dispersed through the country, and living on small farms of their own.

We should endeavour, so to fix, and so to occupy the manufacturer, that, while we strengthen his hands, and render them skilful; we may, if possible, improve his mind; while we cherish in him, habits of industry, we should aim, at the rendering him virtuous and independent. We should remove, as much as possible, out of his sight, the inequality of ranks in society. We should preserve him from a painful feeling, of the omnipotence of riches. Let the manufacturers work for themselves, in separate families, in separate habitations, and in rural situations; thus, will they be rendered more cleanly, more industrious, more independent, and virtuous; they will lead a life of innocence, free from temptations to do wrong, removed from occasions of repining; they will feel the conscious dignity of honest industry. Contentment, integrity, and cheerfulness will become inmates of their cottages; they will seat themselves on the hearth; they will brighten the eyes, and illuminate the countenances of the humble owners.

The removal of manufactures from the capital, into the country, may be effectuated, in two modes.—The first is, by the establishment of large factories, where the workmen may be all collected together, under the immediate controul, and inspection of the master manufacturer. This is an undertaking, that requires a large capital, and considerable talent, in the adventurer.—A heavy preliminary expence must
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be incurred, in providing the necessary buildings, and accommodations, for the people; and the person, who enters on such a hazardous speculation, should possess abilities of a kindred stamp, with those of the legislator and the general, to prescribe rules, for the conduct of his subjects, to manage their various humours, to ensure their obedience, to make them work cheerfully, to guard against plots and combinations.

The other mode is, by exciting a manufacturing spirit, in the country people, or dispersing manufacturers through the country; the former expedient, of collecting together manufacturers, in a mass, and removing them to the country, is more hazardous and doubtful. The expedient, of exciting a manufacturing spirit, either for the perfection of manufactures, already known, and in part established, or the prosecution of such as are new, is more slow, but more certain. The manufacturing spirit may be excited, by premiums for manufactures, manufactured in particular districts; by encouraging the country manufacturers, to take apprentices; by the purchase of machinery, and utensils, and instruments of manufactures, for the purpose of their being lent, to workmen, who carry on manufactures in their cottages. Would it be too romantic, to expect, that the proprietors of estates, in manufacturing districts, should sacrifice something to patriotism, and consent to receive a certain proportion of their rents, in the various manufactures, which are produced, by the industry of their tenants? to this, I would superadd the measures—of loans, in the several districts—of depots of the raw materials, for the supply of the manufacturer, at reduced prices—warehouses, for the reception of manufactured goods, which should be admitted, in discharge of the loan, and in exchange for the raw materials; and, above all, the establishment of granaries, to secure abundance of provisions.

I proceed to a measure, more connected with this subject, than may at first appear, so strongly suggested, by the voice of humanity and compassion, and of such obvious utility, that, in more settled times, I should have warm hopes, of seeing it generally adopted. I mean
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the establishment of an orphan-house, if possible, in each county, at least, in each province, for the reception and instruction of children, left destitute, by the death of their parents, or deserted by them. In these seminaries, they might be instructed, in the principles of religion, employed in such branches of useful labour, and finally bred up to such trades, and callings, as may best suit the health, the bodily strength, and dispositions of the children, or the local situation of the orphan-house.

I would consider all children as orphans, whose parents, being mendicants, instead of discharging the parental duty, carry about their offspring, as the instruments of pernicious and dissolute callings, and too often teach them, to anticipate a wretched and early profligacy. There can be no cruelty, in separating such children from such parents. There can be no cruelty in the rescuing innocent infants, from certain wretchedness, probable vice, and possible violent death, at the hands of justice; to place them in a state of industry and comfort, of virtue and independence. I would, therefore, confer on the magistrates of counties, and on the governors, and directors of these orphan-houses, full power and discretion to take their children, or reputed children, from all strolling beggars, and idle vagrant persons, and to lodge them in these seminaries of industry.

To an orphan-house, for infants, I would add a work-house, for adults, where the idle and dissolute should be compelled to labour, and the industrious, wanting employment, should be freely received, and set to work, on such tasks, as might turn to the best account, for the institution and themselves.—Many parts of the manufactures, of flax, hemp, wool, and cotton, might be thus carried on. Fishing nets, cordage, shoes, and knit hose, and gloves, might be made to advantage. Different ages and degrees, of strength, might be judiciously combined, and a very moderate share of preliminary instructions, with the attention of intelligent overseers, would prove sufficient.

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It would be my great aim, by example, and precept, to bring home industry to the cottages of the poor. Could that be fully effectuated, Institutions, such as charter schools, parish schools, and orphan houses, would become less and less necessary, as the numbers of idle, and indigent persons, should decrease. Where habits of industry prevail, every one is able to maintain himself. Children, instead of being a burthen to their parents, are a source of wealth. In *Holland*, a child is soon able to subsist himself; among that industrious people, infants soon learn, to work at little manufactures, and make a variety of ingenious toys, which serve to amuse their idle coevals, in other countries. By a proper distribution of labour, and a little dexterity, and economy, in husbanding the strength and faculties of individuals, the youngest and the feeblest, even the blind, and lame, may be rendered useful for some purpose or other. For instance, in spinning, knitting, turning the wheels in rope yards, in picking oakum, rasping logwood.—Numbers of children might find employment, in the manufacture of lace and edgings. Numbers of children are employed, in the hardware manufactories of *Sheffield* and *Birmingham*.

SECT. 6.

Of Morals, and public Instruction.

Were a committee of moral inspection, and public instruction established, in each district or parish; it might effect wonders, in the great work, of promoting regularity of morals and industry, and at the same time, of diffusing a knowledge of arts and manufactures. The details of reformation, and the specific encouragement of industry, are of a nature somewhat approaching domestic regulation; and require minute investigation. It is the nature of the truest desert, to retire
from

from view, without advancing any claim ; indeed, without being conscious, of its own value. So, it is the nature of the most acute distress, to pine, in secret, without uttering a complaint. To search out objects of encouragement, assistance, and instruction, a committee of a competent number of the inhabitants of the several districts, might be appointed, by the suffrage of the rest of the inhabitants. I would add, as of course, and without election, all the ministers of religion, in the district, without distinction of sect. These should, in turn, visit the habitations of the labouring poor ; inspect their moral conduct ; their domestic management, their care of their offspring, the progress of their industry. They should recommend such as were distressed, for relief, and assistance, to be collected by voluntary contributions ; the meritorious, who might distinguish themselves, by superior industry, morality, and good conduct ; for reward. The fund for these rewards, might be established, either, as aforesaid, by voluntary contributions ; or, under the sanction of the law, by apportionment, on the several districts ; and I have such a good opinion, of the liberality and humanity, of the people of this country ; that I am persuaded, the sums necessary for these purposes, might easily be procured, in any method, that should be suggested. The too general apathy, that possesses the public mind, does not proceed, from the want of good feelings.

I would have premiums appointed, for,—the most industrious man, the best father of a family, the best son, the best brother, the best husband. Any signal trait, of humanity, of courage, of fidelity, or of honesty, should receive its share of praise and reward. Nor would I exclude even women and children, from these honourable distinction. —I would reward those women, who distinguished themselves, by their industry, and the care of their families. The woman, who had reared and educated the greatest number of children, in health, industry, and good conduct ; she, that had earned the greatest amount, in value, by her own labour ; she, that could boast the neatest cottage—should all be distinguished.—Let not the attention to neatness and cleanliness
be

be thought a trifling object; among the poor, it is absolutely necessary to health, and is commonly a pledge of industry and frugality. Among the children, those should be selected, for encouragement, who have shewn a particular degree, of obedience and attention, to their parents, masters, and preceptors; or distinguished themselves, by their industry; those, above all, should be highly rewarded, who should be able, at the earliest age, to earn the largest daily or weekly sum, by their own labour.—Let it not be thought, that I wander from my subject, in adverting to the mental qualities.—The moral dispositions of the labouring poor are intimately connected, with the maintenance of industry and frugality; and the consequent prosperity of manufactures; much more so, than careless pride, or unfeeling avarice could conceive, or would be willing to allow.

There should, likewise, be premiums, for improvements, in manufactures, either to shorten the process, or improve the fabric;—for the best web of linen, woollen, or cotton; the finest yarn, or thread; the best flax, or wool, produced in the district—for the discovery of any new vegetable, mineral, or animal substance, useful for the purposes of manufacture; or of new properties, and new applications, of substances already known.

The result of the researches of those committees, should be regularly entered, in books, to be kept by them respectively, for the purpose. Such registers, if faithfully made, and regularly kept, would furnish us, with authentic materials, for a work, which is, at present, a grand desideratum; and which would be of the utmost utility, in directing the attention and labours, both of the legislator and philosopher, in the encouragement of the agriculture, and arts of this country, I mean, a statistical account of *Ireland*. The great utility of a work of this kind, would compensate the expence of such an institution, as I have mentioned; were no other good consequence to result from it.*

VOL. IX.

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* Since this Essay was written, some progress has been made in a work of this nature.

I would seriously recommend these hints, to the notice of the wealthy and powerful, and conjure them, not to consider the foregoing scheme, as wholly chimerical, and impracticable. Much more might be effected, by the judicious expenditure of small sums, in this manner, throughout the kingdom; than by all the parade of bounties, soliciting the industry and enterprize of opulent traders, and master manufacturers, to exertions, which they would have been disposed to make, of themselves, had bounties been out of the question. Morality of manners would become a constant resident, in the homestead of the peasant, and the artisan; the industry, independence, and comforts of the poor, would be fixed on a rock, by permanent habits; and not left to wheel about, on the weather-cock of commercial speculation, the sport of every wind, that blows. Some few persons, of elevated rank, have attempted to set examples, of this manner of encouraging industry and good conduct.—For instance, premiums for spinning have been proposed, to the young women of a district; and, were methods to be adopted, by every gentleman and lady, of rank and fortune, in their respective neighbourhoods; the expence would be inconsiderable, compared with the magnitude of the object; and, I am persuaded, would quickly produce the most beneficial consequences to the nation.—I need not ask the humane and rational spirit, whether prizes of this kind would not be more useful to the public, and afford more real satisfaction to the donors, on reflection, than silver arrows, for bow-men, and amazons, and toxophilites; and gold and silver cups, for jockies, and running cattle.

Should the institution, at last, become a national object; and a fund, for the distribution of premiums, be provided, either as I have already mentioned, by applotment, on the different parishes, or by presentment, on the county; the adjudications might be made, at the different quarter sessions, by the justices, in conjunction with the parochial or district committees of moral inspection. I would propose, that the rewards, should be ready prepared, and bestowed on the deserving candidate

didate publicly, and at the very moment of adjudication; that the whole ceremony might make the greater impression on the general mind; and I would wish them to consist, of articles of permanent utility; as utensils of agriculture, or trade; wearing apparel; a cow, or some other useful domestic animal.

It may be objected, that the industrious, who live in the remote parts of a county, would lose more time, in the journey to the place of the quarter sessions, in the prosecution of their claims, than the prize, if obtained, would be worth. I cannot think so. Though the prizes, considered, in themselves, might be insignificant; in a moral point of view, they would be inestimable. The time, employed in these examinations of merit, would not be spent in vain, these inquests of virtue would be most dignified and affecting spectacles; they would be lectures of integrity and good conduct, to all the spectators; and leave the most salutary impressions on every mind.

SECT. VII.

Subject of Morals, and public Instruction, continued.

To secure the moral conduct, of the lower classes of society, and diffuse the regular habits of industry, among them, we should attend to the education of the rising generation. Much may be done, by reward, and punishment, by precept, and example, to reform the conduct of the old. It is from the pliable, and as yet, uncorrupted mind of childhood alone, that we are to look for a full return, to our cares; a harvest, free from danger of blight and disappointment.

The wisdom of some general plan of national education, which might embrace the children of the industrious poor, has been long acknowledged, and the want of such an institution deplored. Some prelimi-

nary steps have been even taken, for carrying into effect, a national establishment, for the instruction of the poor. It was plainly seen, that to this alone, we could look with certainty, for improvement in public morals and industry, and of consequence, in public prosperity. It could not be denied, that there were funds, which, if well employed, would be more than sufficient, for the achievement of this great work, funds, which, at present, produce little, if any advantage to the community. It was supposed, that the measure had the warm wishes, and entire support of government, and a copious review of the subject, was drawn up, by a distinguished personage, then, high in situation, in this, and now still higher, in situation and confidence, in a neighbouring country. It is not easy to explain, why no further progress has been made, in this great and necessary work, a work, which, if properly planned, and duly executed, would contribute more to the prosperity and improvement of the manufactures of the country, than any other measure, which could be suggested. *Æque pauperibus prodest, locupletibus æque.*

In countries, where habits of industry prevail; children, instead of being a burthen, are a source of wealth, to their parents. In *Holland*, a child is very soon able to procure his own subsistence, by his little labours. Most of the toys, that amuse the children of other countries, are made, by their industrious cotemporaries, in *Holland*. Children of a very tender age, indeed, under the care of judicious and humane inspectors, may be most profitably employed in various branches of the linen, the hempen, the woollen, and cotton manufactures, as also in different branches of that of hardware. This is the great advantage of extensive capital, and consequent division of labour; that it assigns to sex and age tasks, appropriated and adapted, to the powers and talents, of the individual. We see instances of this, in the numbers of children, employed in the hardware manufactures, at *Birmingham* and *Sheffield*, and in the different cotton manufactories, in *Great Britain* and *Ireland*.

Much

Much is proposed to be done, by the legislature, in the establishment and maintenance of *protestant charter schools*; and large sums are annually voted, by parliament, for their support. Something, no doubt, has been effected, by these institutions, in the education of the poor; but, I fear, the success is far, very far, indeed, from corresponding, with the wishes of the legislature, or the heavy expence incurred, by the nation. There seems to be something wrong, in the first conception of these foundations. They commenced—not, with a double aspect, but rather with two distinct aspects, that point different ways;—they profess, as the name imports, to inculcate a particular mode of faith; and they propose also, (and I presume, it is on this account, they are supported, by parliamentary aid,) to encourage industry, in general.—Industry is of no religious sect; the wants of the labouring poor, the means of brightening their prospects, chearing their exertions, and ameliorating their condition, the immense worth and importance of the lower classes of the community, these are objects of public care, that stand clear of all religious controversy. National education should be directed, to general utility; general utility cannot be pursued, while we confine our views, to one particular sect, or class. Education, to be generally useful, must be something, in which, all, without reluctance or scruple, may co-operate. Intolerance must not counterfeit the amiable countenance, and clothe herself, in the venerable garb of *Charity*, that she may grasp, with profane hand, the funds, that should be consecrated, to the most holy purposes; to the diffusion of practical morality—of general industry—of national prosperity.

The idea of protestant charter schools, is not only ill calculated to promote the diffusion of industry and good conduct, and ill adapted to the present state of society, and the enlightened spirit of the times; but, I apprehend, that, (supposing the idea of protestant charter schools were now defensible, in theory,) the expenditure of the public funds, in these establishments, is not regulated, by judicious economy, or accurate

curate and enlightened inspection; nor are they rendered productive of all the good, of which even the present narrow and illiberal system is capable. I mean not to say, that, there is, in general, any gross malfeasance in the administration of the protestant charter schools; but, certain it is, that sufficient care and attention are not employed in the regulation of these seminaries. The children are too much at the mercy of the masters, and mistresses; and too little judgment is shewn, in the selection of the persons, who are invested with the important trust of educating these children. The consequences are such, as might naturally be expected; frequently gross inattention, or worse, with respect to the cleanliness, the diet, and apparel of the children; as well as to their morals, and progress in industry. Hence, it too frequently comes to pass, that when the charter school children are taken as apprentices, to be trained up as domestic servants, or instructed in manufactures, they most commonly prove slothful, dirty, and vicious.

The task of education is a most difficult and important one. There is none that requires an union of more talents; it demands a liberal and enlightened mind, enlarged and philosophic views, and an intimate knowledge of the human heart. Yet, to what hands is the work of forming the tender mind, too commonly abandoned! If high expectations, and rewards, fail of procuring instructors, duly qualified, even for the children of the generous, the wealthy, and the great, what must be the prospect of those, whose morals, and education, depend, on the cold, and churlish hand, of eleemosynary instruction. Yet, a proper education of the lower classes, directed to make them fill their rank in society, with comfort to themselves, and advantage to the community, is, at least, of equal importance, to a nation, with that of the superior orders.

The task of instructing the lower classes can only be performed by means of large institutions, that economize education, by bestowing it collectively. Yet, it requires no small degree of ability, and circumspection, to obviate the ill consequences, that may result, from the education of the poor, in large masses. Human creatures in a gregarious state. are too apt to deprave and corrupt each other.—in the
public

public schools of the opulent and refined, this tendency is, in some measure counteracted, by the spirit of emulation, and an honest pride. These are motives, which one cannot expect to find generally prevalent, among the inferior classes, unless extraordinary means are employed, to instil them into the tender mind of youth. It is not for me, on this occasion, to prescribe, in detail, what these means should be: indeed, they cannot be comprised, in certain rules, they must be left, in a great measure, to the good sense, and knowledge of human nature, of those, who are engaged in this province. Could such means be successfully employed, they would render the task of diffusing industry and morality much more easy. I fear the province, of instruction in the protestant charter school, is confided, with few exceptions, to persons not very capable, of discerning, or employing those means.

In addition to some general system of education, which might comprehend the children of the labouring poor, and diffuse, together with principles of religion and morality, and a knowledge of reading, writing, and the elements of arithmetic; an acquaintance with agriculture, gardening, or the most useful arts and manufactures. I would propose the establishment of an orphan house, if possible, in every county; at least in every province. I say orphan house, but I would not confine the institution to orphans, in the very strict sense of the word.—Children, deserted, by the death, or the flight of their parents. I would consider those children as orphans, whose parents being mendicants, do not perform towards their offspring, the parental duty, of training them, in habits of industry, but carry them from place to place, as instruments of their dissolute, and pernicious vocation; and too often teach them, to anticipate the profligacy and dishonest arts, of maturer age. There is no cruelty, in separating children from such parents. The parents can have no real tenderness, no true affection for their offspring, who would wish, to lead them, through paths of vice and wretchedness, to the prospect of an untimely end by the hand of justice; or who could repine, at seeing them rescued from such a dreadful destiny, and placed in
situations

situations, where they may learn to become useful members of society and obtain an independent livelihood, by honest industry. I would consider, also, as orphans, the children of the criminal poor. Where children are thus rendered orphans, by the mendicity or criminality of their parents; the legislature ought to effect a separation between them, with the unsparing hand of a stern mercy. And this separation should continue, till the education of the child was completed. One description of children we may call *orphans* of death, another, *orphans* of dereliction.

Some questions may arise.—Shall any distinction of ranks be admitted into the orphan houses, and schools of general instruction?—Shall we admit them, with a reference to the origin of children, and discriminate them into separate divisions, and distinct places of residence, with a preference, in favour of the circumstances of respectability, and moral estimation, which will, commonly accompany the parentage of orphans by death?—Or, rejecting all distinctions, but those, which naturally result, from the difference, of sex and age, shall we adopt a principle of equality, and hope, that uniform treatment, and uniform instruction, shall produce, in the little members of those communities, uniform advances in morals and industry?—What system and form of education shall be adopted? In what specific tasks, in what particular branches of manufacture, or details of industry, shall the different divisions of sex and age be employed? These, and many other interesting queries, respecting the plan of education, and course of economy, to be observed, in orphan houses, and other charitable seminaries, will suggest themselves, to the good sense of the humane and patriotic persons, who may engage in the formation of such establishments. But, were I capable of answering them, the discussion would occupy more room, than can be afforded, within the limits of the present essay. Let us proceed,—To an orphan house, and seminary for infants, I would superadd a work-house, and penitentiary, for adults of both sexes. Those who should be received, only as objects of compassion, and relief, should be kept
separate

separate, from such as should be received, for the purpose of correction, and reformation; or should only be sent among them, in case of ill conduct, by way of degradation, and punishment, or in the capacities of superintendents and instructors. Again, the two sexes, should be kept distinct from each other; and each sex should be subdivided, into several classes, according to their ages, their degree of strength, their moral conduct, their aptitude for learning any art, or manufacture; or the knowledge of any, which they might already possess. Tasks should be assigned to all these different classes, with a regard to the several principles of division, which governed their formation. The riotous and disorderly should be compelled to work, in total solitude. Committees of enquiry and inspection, chosen annually, by the magistrates of the county, with the concurrence of the ministers of religion, in each district, to superintend the management of the orphan houses, the schools, the work houses, and penitentiaries should take care to enforce such regulations, as might be adopted.

I shall conclude this section with an account of the *hospicio* of *Cadiz*, as I find it given in *Townsend's Travels*,* which will convey to my readers, some most useful hints, on the subject of public seminaries and work-houses. The plan of it seems to have originated, from the notions of the enlightened and philosophical *Campomanes*, on the subjects of national industry, and political economy.

“In this institution are received the poor, of every nation, who are unable to maintain themselves; and, in the first place, orphans, deserted children, and the aged, who are past the capability for labour. The blind, the lame, idiots, and mad people, but especially priests, when aged, and reduced to poverty. Even strangers are admitted to a temporary residence in this establishment.

VOL. IX.

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Neatness

* *Townsend's Travels*, Vol. 2d, page 360. See a tract by Count *Campomanes*, entitled, “*Educacion popular*.” See also the regulations of the work-house at *Shrewsbury*.

“Neatness universally prevails; and all who are here received, are clean, well-clothed, and have plenty of the best provisions. Care, is taken, to instruct them in the Christian doctrine, and every six months the young people are publicly examined. Their education is, to read, write, cast accounts; and such, as manifest abilities, are not only instructed in the principles of geometry, but, if they are so inclined, taught to draw. The boys are trained to weaving and various crafts, the girls spin flax, cotton, wool; knit, make lace, or are employed in plain work.

“Forty-five looms, and sixteen stocking frames, for the inmates, with a proportionable number of spinning wheels, working benches, tools for carpenters, turners, shoe-makers, and taylor’s; a twisting mill, and spinning jenny, a machine for carding cotton;—all these are provided within the walls, for the purpose of employing the inmates.

“To encourage industry, an account is kept, for each individual; wherein he is made debtor to the house, at the rate of three reals the day, or about seven pence sterling, and has credit, given him, for all the work he does; and, should the balance be in his favour, as often happens, it is paid to him, whenever he leaves the *hospicio*, and can make it appear, to the satisfaction of the directors, that he is able to maintain himself, without having recourse to their future aid. ‘I examined,’ (says *Townshend*) ‘the accounts of many, who cleared for themselves more than half-a-crown a week, and were looking for settlements.’

“Adjoining to the house, is a spacious shop, for the accommodation of all who are willing to work; wherein are provided proper implements, and raw materials; and the moment any one has completed his work, he receives the price of his labour; being permitted, not only to lodge where he pleases, but to spend his gains, according to his fancy.

“But, because many who would work, are indispensably confined at home, where, from poverty, they are unable to procure either wheels
or

or wool; the governors provide both, and pay them, without any deduction, for their work. By these means, out of three hundred and forty eight families above five hundred souls were trained to industry. The directors informed me of three children, the eldest, nine years of age, who, by spinning, gained six reals, that is, more than fourteen pence a day, and supported a paralytic father.

“Not satisfied with these exertions, they have established schools, in different quarters of the city, on the same plan, and providing the best masters, in every branch of business, which they wish to cultivate, they admit freely all who are desirous of being taught.

“It is their intention, to pick out, from the brightest of the boys, the best draftsmen, and having instructed them in the various languages of *Europe*, to make them travel, for the acquisition of knowledge, and the advancement of manufactures.

“As the surrounding parishes may not find it convenient, to adopt similar institutions, on a smaller scale; therefore, they receive the infants, the aged, and the infirm, from any of them, on condition of being paid, in due proportion, for their board.”—This is a magnificent sketch of a system of public institution, with a view to arts and industry. The intelligent traveller seems to question the utility of some parts of the plan; yet, surely, the account of this establishment, may furnish many important hints, and matter of much profitable reflection, to the legislature of this country.—I have now appropriated sufficient space to the subject of education. It is time to examine other general methods of improving and encouraging manufactures.*

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* Some similar regulations are beginning to be put in practice, of late, at the House of Industry, in Dublin.

SECT. VIII.

Of Regulation and Controul.

The establishment and diffusion of arts and manufactures depend on two things, which must co-operate in an amicable manner, though, in name, and at first sight, they seem to clash;—encouragement, and regulation, indulgence and restriction. The exertions of human industry to be most effectual, at least, to be most consistent, with the happiness of the individual, must be free, like his will. This I mean, with reference to the choice of objects of industry, and the selection of one path of exertion, in preference to another. But, though regulation may not point out any particular road, and compel men to pursue it, or restrain him from travelling, in that which he chuses; it may fairly compel him to walk uprightly, in his way, without jostling his fellow-travellers, or injuring the adjacent fences of his neighbours.

Encouragement prevents despondency, and excites emulation; regulation excludes fraud, and ensures subordination; encouragement may hold forth bounties, (if necessary) or offer immunities; it may even, in some create monopolies.—Regulation, on the other hand, prevents or punishes, dishonesty, and insubordination, and restrains abuses. On these principles, while the legislature protects the manufacturer, with a parental love, it will also scrutinize his conduct, with a parental severity; and endeavour to detect, and when detected, to remedy, by severe laws, all miscarriages, improprieties, and imperfections, in the manner of preparing, and making up the different fabricks, for home, and foreign markets.

To instance, in the linen manufacture, the legislature appoints inspectors, to control the linen manufacture, the favourite object of the country. It
examines

examines the quality of the pieces, it measures their quantity. None are permitted to pass into the market, which are not duly sealed, as a badge of their integrity. We see, in consequence of these regulations, what a high character the linens of *Ireland* support in the foreign market; with what confidence the buyer is inspired; and, confidence, in dealing, is the very soul of traffic.

In addition to the rewards, which the manufacturer derives, from a compliance with these regulations, in the high character, and rapid sale of this production: the legislature remunerates his obedient conformity, with many valuable privileges. He can import, free from duty, the prima of his manufacture, and the materials, which are requisite in the different operations of bringing it to perfection; and he is paid considerable bounties on the exportation of his fabricks, to foreign markets. Certain it is, that these wise provisions, of the legislature, have been attended by the most beneficial consequences; and, that we may ascribe to them, in a great measure, the present flourishing state of the linen manufacture, in this country.

Sir *William Temple* mentions, among the causes of the prosperity of the Dutch manufactures, the order, and exactness, in managing their trade, which brings their commodities into credit abroad. This was first introduced, by severe laws and penalties, but is, since, grown into custom. I have observed, (says he) above thirty several placards, respecting the manner of curing, pickling, and barrelling herrings. The small arms made at *Utrecht*, are forfeited, if sold without a mark, or marked without trial. In the *India House*, pieces of scarlet cloth, which are sent, in great quantity, to those parts (meaning the East Indies) are marked, with the English arms, and an inscription in English.

There is a circumstance observed, by Sir *William Temple*, that contributes to facilitate the work of regulation, and to methodize, and simplify, trade, and manufactures, among the Dutch; and which, certainly, enables the legislature and government, with more facility, to take a bird's-eye view of the trade, the resources, and industry of the country; which

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is, that every particular town affects some particular commerce, or staple, valuing itself thereupon, and carrying it to the greatest height. *Flushing* carries on the trade to the *West Indies*—*Middleburg*, that in French wines—*Rotterdam*, the English and Scotch trade, and that in French wines—*Haerlem* excelled in the linen trade, mixed stuffs, flower roots; and garden feeds—*Delft* was formerly famous for a kind of porcelain—Other towns were celebrated for ship-building—Some for the herring, some for the Greenland fishery—The trade with the East Indies was carried on by *Amsterdam*—Something analogous obtains in Britain—*Sheffield* and *Birmingham* excel in the manufactures of hardware—*Manchester* in that of cotton—*Norwich*, *Wolverhampton*, *Frome*, and *Witney*, in different fabricks of wool—When manufacturers, that produce one and the same fabrick, are collected together, in the same town, or district, the task of inspection, and regulation, becomes, as I have said, more easy. It is, also, more easy to communicate instructions, in the art, to the young people. If any new invention, or improvement, in the manufacture, should be devised, and found useful, on experience; it is more easy to convey a knowledge of it to the artificers, and to render them expert in the use of it. The workmen, too, living, and labouring, in the presence of each other, exhibit examples of industry, and excite a spirit of emulation; and the division of labour, is promoted, by this congregation of workmen.

As many of the processes, in bleaching, in this country, are regulated, by the legislature; and certain modes are prohibited under penalties, which, to facilitate the operation of whitening linen, or, to save the charge of workmanship, and materials, would injure the soundness, and damage the texture of the cloth; so the French government, exerting itself, to bring the woollen cloth of *France*, to superior perfection; particularly, in regard to colour, employed itself, to regulate the art of dying; for this purpose, certain operations, and the employment of *certain drugs, and materials, were interdicted*,* the effect of which was to give a fraudulent, and imposing

* See Introduction to Bancroft, on permanent colours.

posing, or what is technically called, a *flying colour* were prohibited. The use of others, which give a more permanent colour, was enjoined by the government.

It was thus that the great *Colbert*, the father of French commerce, and manufactures, acted. He divided dyers into two classes; the one, dyers, *en grand teint*, were confined to the colours, deemed to be lasting; while the dyers, *en petit teint*, were allowed to give those, which were flying. Restraints of this kind, though intended to prevent fraud, must have operated, as checks upon future improvement, if the government had not encouraged useful discoveries, first, by offering particular rewards, for all such discoveries; and after, by appointing those eminent chymists, *Dufay*, *Hellot*, *Macquer*, *Berthollet*, in succession; to superintend, and improve, the arts connected with chymistry, and more especially, that of dying. This situation became a government appointment, and was most ably filled. An employment of the same kind, were it bestowed on a chymist, duly qualified, (and such might be found) would be of the highest utility, in improving many of the arts, and manufactures of the country.

When I propose, that the legislature should interfere, to regulate and control manufactures, I would, for the most part, confine its interference, to simple inspection, and examination; and that on the cheapest, and least oppressive plan, for the purpose of preventing carelessness, and frauds, that bring a discredit on manufactures in foreign markets. To enter into the details of a manufacture, and enjoin certain mechanical processes, and prohibit others, by force of laws, and penalties, is a work of some nicety, and hazard. The legislature, in *Ireland*, has done this, with respect to the linen manufacture. The government, in *France*, has done this, with respect to the woollen manufacture; and very judiciously, I am persuaded, in both cases. But the utility, or detrimental effects, of mechanical processes, ought to be demonstrable, on scientific principles, to justify the interference of the legislature, or government, for the purpose of injunction, or prohibition. The nature, and genius of trade, and manufacture, are free, and independent. The productions of human industry, must spring of themselves. Government, may fence the ground from beasts, may cultivate the
soil

foil around them ; may prune their exuberances, may lop off diseased, and unproductive branches, and irrigate them, with bounties : but it will not succeed, should it propose, to rear them suddenly, in a hot-bed, to a maturity of healthy growth. It cannot clip, and torture them, into arbitrary forms, without incurring the risk of killing them.

SECT. IX.

Of Charitable Loans.

The true mode of encouraging industry is, by shewing to the people, that exertion and profit, labour and gain, walk hand in hand. That this sentiment may be excited, in its full force, and efficacy, there should not be any intermediate visible agency, or operating cause of benefit, between the artisan, and his own exertions. The fruit, which he derives from his labours, should seem the necessary, and immediate progeny of his labours themselves ; there should be nothing, to leave his path doubtful before him, by giving him hopes of subsistence, from any other source, than his own actual merit. All that a person fairly obtains, by undisputed efforts of his own industry, is, to him, a lesson of industry, and a strong incentive, to profit, by that lesson. Far otherwise, with respect to all that is obtained, in the way of bounty, and gratuity ; it is a thing foreign from the exertions of the industrious ; it comes unexpectedly, and suddenly ; it is, in some degree, fortuitous, and not necessarily connected with the exertions of industry. On these principles, I am convinced, that he who lends a sum to a manufacturer, and strictly holds him to repayment, as soon as repayment is in his power, is more truly his friend, and will serve the cause of industry more effectually, and extensively, than he who should bestow an equal sum, without any expectation of return, on the manufacturer in question.

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The most effectual mode of encouraging manufactures, is, by the exciting a permanent, and active spirit of industry, among the manufacturers. This end is most powerfully promoted, by a pursuit of the following objects ; to secure, for the manufacturer, the necessaries of life, at a reasonable rate—To procure him the *primum* of his manufacture, of a good quality, and on good terms—To protect him, from oppression and wrong—To protect him, from himself ;—that is to say, to put it out of his power, to be prodigal, or dishonest—To provide a market for his manufactures, when produced, and, as the moving spring, of all these productive causes, to furnish him with a capital, which may enable him to prosecute his art, or trade. Where a country is poor, that is to say, where there is a scarcity of capital, in the collective body, there will be found many manufacturers, who will not possess, of themselves, the capital requisite to set their industry in motion. The restraints on the commerce of *Ireland*, which subsisted for near a century, have concurred, with the multitude of absentees, who continually drain vast sums of money out of the country, to render *Ireland* comparatively poor ; and that national poverty has shackled the industry of the people, and impeded the progress of improvement in manufactures and arts.

The great disadvantage and inconvenience, under which this country labours, is the want of capital. To remedy the fatal effects which result from this disadvantage, and to provide, for the regular support of industry, without forcing it into any particular channel, I would propose the institution of a fund throughout the kingdom, with an appropriate office, in every large town, for the purpose of lending money, at legal interest, to industrious tradesmen, and artificers. By this means, the poor artisan, would be enabled, to procure for himself tools, and the prime materials of his manufacture, without being under the necessity, of resorting to pawn-brokers, whose extortion consumes the whole profit, that arises from the employment of this little borrowed capital. Thus, would the manufacturer be enabled, to extend his industry, by purchasing a greater stock of materials, a larger quantity of tools, or machines, and employing an increased number of jour-

neymen. He will, also, buy his materials, and tools, of the best quality, and on the most reasonable terms, through his being thus furnished with ready money, to pay for them. On the same account, he will be able to engage the best journeymen. Thus, the productions of his art, will be rendered more perfect; and the exertions of his industry, will duly replace the principal, and interest, with a competent profit for the manufacturer himself.

Yet, though the exactions of pawn-brokers are a severe grievance, I would not propose, to exclude them totally. The shops of pawn-brokers are an evil; but, I apprehend, they are a necessary evil. They are, sometimes, useful to those, whose wants are too proud, to borrow small sums, in the avowed, and usual modes of borrowing; and to those who, having neither friends, nor credit, to enable them to borrow, on more advantageous terms, find no resources, in their distress, but a deposit, and a pawn-broker. The wants of the borrower, and the scarcity of money, must be arbiters of the interest, that money will bring. Enact what penal laws you please, there always have been, and always will be, lenders of money on usury. It is better, therefore, that some bounds should be set to the practice; and that money-lenders should be curbed by some regulations, which may be really enforced, than that the evil should be aggravated, by a vain attempt to cure it. A total prohibition of usury will, certainly, be evaded. Both lender, and borrower, will conspire against the law; and the risque in lending, and the necessity of concealment, will only encrease the hardships of the borrower, and the rapacity of the usurer.

I would be far from proposing an indiscriminate loan, to every person, who should apply, under the denomination of tradesman, or manufacturer. Such, only, should be entitled to aid, from the institution, as were likely to make proper use of the loan, and to repay it with punctuality; that is to say, such as could be recommended, for their habits of industry, and for the integrity of their dealings,

I would not propose, to lend this money, interest free; on two accounts: first, I would provide for the permanency of the fund; and, as
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the interest on the capital sum would, with good economy, considerably exceed the expence of management; the accumulation of this annual surplus, would guard against contingent losses, and preserve the fund from being diminished; perhaps, augment it. Secondly: the payment of a moderate interest, would serve to stimulate the industry of the borrower, to render him frugal, by deducting a portion of his gain; and by reminding him, of his obligation to discharge the principal.

This fund might be portioned out, through the different counties, in various sums, according to the population of each. The sums, respectively allotted, might be vested in trustees. The loans should be made, by the treasurers, of the different counties, who should receive an adequate compensation for their trouble, out of the returns of interest; but, should take neither fee, nor reward, from the borrower; nor be permitted, to recommend any person, or give a preference to any, as a borrower. The accounts, of the general fund, should be stated, four times, in the year, by an auditor, under the control of parliament; before which, a comprehensive view of the state of the institution, should be laid, on the first day of each session.

The only qualification, requisite for obtaining the benefit of this loan, should be, a certificate from three, or more, reputable persons of the vicinage, of whom the minister of religion, of the congregation to which the claimant may happen to belong, (whether protestants of the established church, dissenter, or catholic,) should be one. By this certificate, it should appear, that the person seeking the loan, is either a farmer, a manufacturer, or carries on some useful branch of trade; that he has resided, at least, twelve months, in that district, and maintained an unimpeached character, for integrity in his dealings, moral conduct, sobriety, and industry.

The treasurer of the county, or whoever should be the agent deputed to lend out these sums, should be required to keep a book, ruled in four columns, and disposed alphabetically. The first column should contain the day of the month, and year; the second, the sum lent, and time of the

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loan; the third, the name of the borrower, in alphabetical order; the fourth, his place of abode. The entry, being made in this form, the borrower should be obliged to subscribe it, with his name, or mark, before his receipt of the sum to be advanced to him; and this entry, and subscription, appearing in the book of the county treasurer, or other agent, for the fund, should be made sufficient evidence, in law, of the debt; and a judgment for the amount, with interest, and moderate costs (for I would have the costs limited to some small amount) should be final and conclusive; and have the force of an execution, as well, against the goods, as the person, of the defaulter, wherever he should be found. The term, for which the loan might be granted, should be of various duration, according to circumstances—not less than six weeks, not more than two years. The interest, if the loan exceeded three months, should be paid quarterly, and the principal should be rigidly exacted, at the end of the specified time.

The utility of institutions of this kind, early appeared, to the excellent Dean *Swift*; and we find, in the account of his life, that he constantly appropriated a considerable sum, to be lent out, in small portions, among honest, and necessitous tradesmen. These loans he received back, by weekly payments, out of the profits of the borrower, in such a proportion, that the whole sum should be repaid, in the course of a year, together with a small gratuity, to the person, who kept the account of the disbursements, and weekly payments.

The patriotic idea, that occurred to the Dean, has, since, been followed up, by the charitable musical society, in the district of Dublin; but their means are scanty, and their influence confined. Perhaps, it would answer the proposed end, to enlarge the funds of the Charitable Musical Society, and extend its operations over the whole kingdom.

Well——the utility of such a measure is acknowledged;—but, how is a capital, for the purpose, to be formed, and maintained?—Many of the sums, which are now given in bounties, on such objects, and in such a manner, that they seem calculated, rather to promote the speculation of the rich, than the industry of the poor, might be turned from their present destinations,

tions, with advantage to the country ; and allotted, to the augmentation of the funds for the charitable loan. Consider, what sums have been granted, in bounties—What sums, lavished on moles, piers, and fisheries, without producing any visible benefit, to the community ! Had these sums been circulated, in charitable loans, how would they have invigorated industry ! To create a fund, for the maintenance of the proposed institution, I would impose a tax, of one shilling, in the pound, on the estates of all absentees, to continue for seven years.* There would be peculiar justice, in this measure ; they who, by drawing away the capital of the country, impede the progress of its improvement, would be taxed, to repair, the very mischief of which they are themselves the chief cause. A tax, of one shilling, in the pound, on what is supposed to be the annual revenue remitted to absentees, out of this country, would be forty thousand pounds, yearly, which, in seven years, exclusive of all increase, from accumulated interest, or any other source, would amount to two hundred, and eighty thousand pounds. A fund this, which would reanimate industry ; send life, blood, vigour, and health to its heart ; and diffuse hope, and comfort, thro' every member of the community ; and, as the tax would not be a permanent burthen, on the proprietors of land, it would form no precedent, for a general and permanent land tax ; the fear of which, has rendered many well-meaning people, hostile to the fairest of all taxes, a tax on absentees.

Would it be too romantic, and visionary, to suggest a tax on all pensions, exceeding five hundred pounds, per annum ; and on the salaries of all sinecure places, for the same benevolent purpose ? The times, at present, are not ripe, perhaps, for such a measure ; but, a period may arrive, when it will appear just, and reasonable, that those should be selected, as objects of taxation, to serve the exigencies, and promote the emolument of the state, who receive large sums of the public money, without giving any value for them, in return, by their services, or exertions.

* The reader will here recollect, that this tract was written before the measure of a legislative union took place.

CHAP. II.

Schemes, for the Encouragement of Industry, and Advancement of Manufactures, whose Utility is questionable.

SECT. 1.

On Bounties.

Dr. Smith combats the utility of bounties, and prohibitions, (which always go together, in theory) with great strength of reasoning.

“ That the monopoly of the home market (says he) frequently gives
 “ great encouragement, to that particular species of industry, which enjoys
 “ it, and turns towards that employment, a greater share, of both the la-
 “ bour, and stock of the society, than would otherwise have gone to it,
 “ cannot be doubted. But whether it tends, either to encrease the general
 “ industry of the society ; or, to give it the most advantageous direction, is
 “ not, perhaps, altogether so certain.

“ The general industry of the society, never can exceed, what the capital
 “ of the society can employ ; as the number of workmen, that can be kept in
 “ employment, by any particular person, must bear a certain proportion to
 “ his capital ; so, the number of persons, that can be employed, by all the
 “ members of a great society, must bear a certain proportion to the whole
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“capital of this society. No regulation of commerce can encrease the quantity of industry, in any society, beyond what its capital can maintain. It can only divert a part of it, into a direction, into which it might not, otherwise, have gone. And it is, by no means, certain, that, this artificial direction, is more beneficial to society, than that, into which, it would have gone of its own accord.”

Every individual is continually exerting himself, to find the most advantageous employment for his capital. It is his own advantage he has in view ; but, the study of this, necessarily leads him, to prefer the employment most advantageous to society.

The country which has not capital sufficient for all purposes ;—agriculture—manufactures—and the trade of export, has not arrived at the degree of opulence, for which it seems naturally destined. To attempt, however, prematurely, and with an insufficient capital, to pursue all these three objects, at once, is not the way for a society, no more than an individual, to acquire a sufficient capital.

The same principle applies to the various modifications of manufacturing industry. That country must be in a state, of the highest opulence, which is able to carry on, at home, all the useful and elegant manufactures ; so as, not only to supply itself, but to send the superfluities to its neighbours, in exchange for money, the necessaries of life, or the *prima* of manufactures. But, as an individual meddling, at once, in a great variety of manufactures, embarking in new ones, with which he is imperfectly acquainted ; perhaps, to the neglect of others, of which he is a master, endeavouring, with a giddy rapacity, to discover new sources of gain, instead of employing himself, with patient perseverance, to keep open channels, for springs that already flow ; as such an individual would, in all probability, soon become a bankrupt ; a similar fate must attend the community, that should proceed in a similar spirit of unsettled speculation, and improvident avarice ; yet, to excite such a spirit, is the obvious tendency of bounties. Trade ought to be left to find its own level, and not allowed to force the exertions of industry, into particular

particular channels, less profitable to the society, than those, in which they would flow, of their own accord.*

In fact, the whole idea of bounties seems to be ill conceived. To increase the prosperity of the country, you increase its burthens. You take the money out of the pocket of the manufacturer, with one hand, in the vain hope of impressing him, with an opinion of your liberality, while you bestow it on him, with the other.

I am afraid, too, that bounties are calculated, rather to promote rash and sudden fits and starts of speculation, in mere projectors, and schemers, than a settled sober spirit of permanent and progressive industry, in the minds of intelligent traders and manufacturers; and that they scarcely reach the industrious poor.

But supposing, for a moment, the general utility of bounties; is it not to be apprehended, that the sums granted, under the pretence of encouraging industry, in this mode, may be dissipated, and fail of producing any beneficial fruit to the country?—Is not the distribution of bounties and premiums, liable to be made the subject of intrigue and cabal, to prove an object of speculation, and become a cause of expence, in clerks, accountants, and other officers; so that the persons, who shall receive and pocket the greatest portion, of the funds, intended for the encouragement of manufactures, shall be, not the manufacturers, but the pampered, full-blown, important, humble servants of the public?—Thus, may a very little public good be purchased, at a very enormous public cost. Supposing the distribution free from malversation, and needless expence; still, the persons, to whose province it may fall, to decide on the merits of the claimants, will be too often misled by false representations, and imposition, sometimes, through the want of that technical knowledge, which the subject, before them may require. Great is the influence and power of arrogant pretension and shameless assertion; particularly, where there is any thing, like *corporate* acting

* See *Smith ubi supra*. The reader need scarcely be reminded, that this Section was written long before the Union.

acting. Man, in the aggregate, (through the clashing of interests, and contrariety of corruption) is, ever more absurd, than he is individually. In this chaos of selfishness and ignorance, the voice of the intelligent few is completely drowned and lost, and thus ignorance, impudence, and fraud devour the golden fruit, which ought to be the prize of industry, integrity, and skill.

It is highly incumbent on the legislature, and on those persons, who possess an influence in the country, to guard their minds, against the impositions, and arts of needy and profligate pretenders, and noisy charlatans; who, in proportion, as they discover ignorance and incapacity, in those to whom they apply themselves, are loud and vehement, in asseverations, and profuse in promises.

Yet, while I profess myself, in general, unfriendly to bounties; I admit, there may be some exceptions, in their favour. The political situation of *Ireland*, considered in all its circumstances, is something so peculiar, that it seems to stand, without a parallel, in the history of mankind. This peculiarity in the political situation of the country, has had a great and very injurious effect on its commerce and arts; and so warped and infected the industry, the exertions, and even the very sentiments, and opinions, of the inhabitants, that the common maxims of political economy may be over-ruled, with respect to *Ireland*.

For a long series of years, the manufactures and industry, of the country, were in a state of proscription. The unvaried operation of a cruel and mistaken policy, and a code of oppressive laws, and regulations, like a chilling wintry wind, froze up all the energies of the people, and blasted their industry. The woollen manufacture, the staple of the country, in particular, was so completely ruined, that it, now, exhibits all the debility of an infant manufacture.

It is a ruling principle, in the allotment of bounties, to particular manufactures, in preference before others, that we are not to consider, so much the intrinsic utility, and abstract importance, of the manufacture itself, as whether it stands in more need, of assistance.—This

need of assistance may arise from various causes.—The manufacture may be a new one—there may exist a dangerous competition, supported by superior capital and skill, the manufacture may require large and expensive machinery, it may have been discouraged by bad laws,—the country may be deficient in capital.—In all these cases, it may be necessary, to counteract the operation of the causes, that prevent or retard the progress of a manufacture, by the cheering influence of bounties. As a depressing force has been employed, to bend and warp our manufactures; it may be wise, to depart from the ordinary maxims of national prudence, and employ some degree of force, to bend them in the opposite direction, that they may be restored to their due form and rectitude. this force we apply, when we grant *bounties*.

It may be proper, to grant bounties, for a season, to new manufactures, of a promising complexion. In the infancy of an undertaking, a series of experiments, doubtful in their issue, are to be encountered; a number of probationary losses to be sustained. Add to this the prejudices, that must be conquered, and above all, the destructive and universal prejudice, whether founded in indolence, or envy, which predisposes people, to augur ill to the success, of new undertakings. Far different is the case, where the benefit of experience has been already gained, the incentives of profit have been already felt, and the community, or the individual is possessed with a strong partiality, for a favourite branch, of manufacture, long and successfully exercised.

In every case, where bounties are assigned, for the support and encouragement of manufactures; it must be, in the hope and belief, that the manufacture, in question, though now unable to maintain itself, or march alone, will acquire such strength and maturity, in the course of time, as to be able to repay with interest, that support, which it now derives from public bounty, and to become, instead of a national loss and burthen, a national source of opulence and prosperity. It would be the height of madness and folly, to give bounties, for the encouragement of manufactures, on any other principle than this; and, far better would it be,

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to relinquish, altogether, than to continue the pursuit of a manufacture, which, instead of promising to support itself, would require, to be fed with perpetual alms, and threaten to remain a permanent charge on the community. Loans from the public funds, to enterprising and intelligent individuals, to aid them, in the prosecution of expensive speculations, in manufacture, might be attended with the best effects, if they were not perverted, by the spirit of jobbing, and made subservient to corruption.

There is, no doubt, profound wisdom, combined with extensive knowledge, in Doctor *Smith's* admirable book on the *Wealth of Nations*, and, in a general abstracted sense, most of his positions are undeniably true; yet, I believe, his book has been productive of many errors and false reasonings, and much idle declamation, on different subjects of political economy. Were men to act fully on his principles, in detail, I am afraid, they would be the cause of irreparable mistakes in practice; and teem with the most injurious consequences to society. Many theoretical propositions may be true, which yet will not bear to be drawn out, into minute corollaries, and applied, in detail, to the purposes of real life. It has been the peculiar misfortune of the present age, to proceed too much on general reasonings, and abstract theories, in contempt of the plain good sense, and accumulated experience of past ages; and, without attending to the limitations, qualifications, and exceptions, required by real use and practice.—The vanity of the present generation, has disposed them to imagine themselves possessed of more wisdom, than all the generations, that have preceded them, put together.—Under this persuasion, they have ventured to meddle with every thing; and attempted to demolish, with a sweeping hand, all the opinions, establishments, and regulations, which had obtained the sanction of past ages. They seem to delight in confounding all the bounds of right and wrong. Thus, we have heard people, in the spirit of the new philosophy, preaching up the blessings of monopoly, and the beneficial tendency of excessive and unrestrained

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usury; and there are, certainly, general theorems, and abstract propositions, on the subject of political economy, which may be employed, to serve the purposes of such theories.—If I may presume to controvert or criticise the opinions, of Doctor *Smith*, I should say, that some of his positions, respecting bounties, and prohibitory regulations, deserve particularly to be viewed, in the light I have mentioned. He has dedicated his work exclusively, to the consideration of the wealth of nations; and, in conformity with the plan, which his title indicates, he seems to have omitted the strength, and the morality, of nations, as foreign from his purpose. These are, certainly, considerations, distinct from the wealth of nations, as well as of individuals, and surely, more deserving of the care of an enlightened legislator. It may, perhaps, appear fanciful, to say it; but, in my opinion, the very title of a profound elaborate book on *the Wealth of Nations*, carries with it something injurious—something that induces error—inasmuch as it seems to denote, that the attainment of wealth is the greatest object imaginable, and should be the great motive and principle of national policy, the great spring of legislative interference. Doctor *Smith* seems to confine himself, to the means of employing capital, in the most profitable manner, without entering into a variety of moral considerations, which ought to have great weight, when we come to revolve the subject of national industry, and the mode and measure of encouraging and extending it. It should also be remembered, that the author, in his book, by treating of the wealth of nations generally, and abstractedly, makes his work a kind of *Utopia*, in political economy. He speaks of a country, as if it were wholly free, to act, and regulate its commerce, according to the maxims of philosophy, or principles of arithmetic, as understood in counting-houses, without taking into his account the foreign relations, the foreign enmities, the domestic and federal causes, and motives, which perpetually fetter and impede, nay, in many cases, wholly preclude the possibility of framing the regulations of home industry, and external trade, on the abstract principles of political economy, by their producing a thousand
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and a thousand unforeseen circumstances, which operate to govern the details of practical regulation, in opposition to all the calculations, and reasons of mere theorists. I do not state this, as an objection to Doctor *Smith's* book; which, no doubt, is an admirable performance: but I mention it, to shew, what evils may possibly result, from the indiscreet, and intemperate use of such general doctrines, when men descend to business, and come to establish practical rules, for the commercial concerns of nations, and individuals. In fact, such theories contain in them too much, of the chimerical dreams of *perfectibility*, which have proved so fatal to the French revolutionists; and, by instigating men, to attempt too much, and to disdain a moderate degree of success, and perfection, such as, alone, are competent to man, and his labours; have, in fact, incapacitated him from accomplishing any thing good.

I have been led to these digressive reflections, by a recollection of what Doctor *Smith* has advanced, on the subject of bounties, and protecting duties. What he says, is for the most part, undoubtedly true, in general theory; yet, unless all nations should agree, by common consent, to act upon his principles, and forego all at once their long established systems of bounties, protecting duties, and prohibitions, it would be impolitic and chimerical, in the extreme, for a single nation to renounce them.

It is true, no doubt, as Dr. *Smith* observes, that the interference of the legislature, in the way of bounties, and protecting duties, may force the employment of capital from its level, and urge it into particular channels. It may be true, that, if all other trades were to resemble that, which must be supported by bounties, they would eat up, each, such a part of the capital, that there would, soon, be no capital left. It may be true, also, “That the trades, or manufactures, carried on, by means of bounties, are the only ones, which can be carried on, between two nations, for any considerable time, in such a manner, as, that one of them shall regularly lose, or sell its goods for less, than it costs to bring them to market.”—These are, no doubt, strong considerations of inconvenience; yet, there may be other considerations, of higher convenience, to counteract these, and reconcile it to the true interest, and sound policy of a nation, to suffer
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privations, and inconveniences of this kind, for a time, or even in perpetuity. Suppose, for instance, that a foreign state should prohibit all the manufactures, of the state in question, may not the measures of prohibition, and protecting duties, be wisely, and successfully employed, to bring such a state to reason, through the very medium of her selfishness, and force her to recall her illiberal restrictions. Suppose, again, that a neighbouring state, wealthy, flourishing in manufactures, should determine to get possession of the entire market for the consumption of a country, even at the price of a temporary sacrifice of profit, and pour in its manufactures, at an under rate until it completely overwhelms the native fabricks. This is a common proceeding with trading nations. And, how is this mode of commercial aggression to be resisted, or counteracted?—Surely, by the means, of bounties, and protecting duties alone, which may enable the native manufactures to stand their ground, against the inroad of foreign fabricks.

It is to be considered, also, what may be the disadvantages, or inconveniences, resulting to a poor state, which has no commodity, or manufacture which it can give, in exchange, for the imported manufacture; from the constant drain of specie, which must be occasioned, by the free influx of foreign manufactures; how calamitous such a situation may become, appears, from the fearful poverty of *Spain*, and *Portugal*; though these countries are the owners of the richest mines in the world. The *Spaniards*, and *Portuguese*, can import woollen manufactures from *England*, of a better quality, and on cheaper terms, than they can produce them at home; yet, it might be sound policy, to give a bounty on the productions of the home-manufactures, and to confine the people to the use of them; or, at least, to give them a preference, in the home market, by the force of protecting duties. Human nature is naturally sluggish, and inert; it requires, at first, the application of some external force, to give it an impetus, and direction; but, when it is once set in motion, it gains strength, and activity, as it goes on, in its course; and will proceed, by its own acquired momentum, without requiring the application of any additional impulse. Thus, in a country, which possesses, in herself the ground work, and means, of having flourishing manufactures, such as possessing provisions, and other necessaries, labour,
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and the raw material, or prima of manufactures, on cheap terms: the people, if they are once roused from their indolence, and supineness, by the care of the legislature, and instigated to exertion, by bounties, and protecting duties, may come to improve their fabricks so much, not only in quality, but in cheapness, that they will, at first, be able to supply the home consumption, on satisfactory terms, and, in process of time, to contend, with some prospect of success, with their manufacturing rivals, in the foreign market. Supposing, even, that the system of bounties, and protecting duties, continued for some time, with patience, and perseverance, should fail of producing such a complete amelioration, as I have mentioned, in the situation of a country, with respect to its manufactures, I do not think, that, even then, it is to be abandoned, and condemned, in every case, and, all circumstances considered, as wholly impolitic, and injurious. We should consider the possible advantages, which may result from confining a large portion of the expenditure of a country, within its own bosom;—from directing a large portion of the expences of individuals, in a community, to the support of the labouring poor around them, in their own country, instead of letting the money, thus to be expended, pass out of the country, to support the labouring poor of another nation; while the poor of the state in question, are consuming away in apathy, and idleness; perhaps, the prey of the most squalid famine, and wretchedness.

Doctor *Smith* takes it for granted, that, if the employment of capital were not turned into some particular channel, by bounties, and protecting duties, trades and manufactures, finding their *own* level, (favourite cabalistic expressions, of his, which have been echoed, and re-echoed, even to satiety, by thousands of pretenders to political science) would flow in some other direction, more advantageous to the community. I do not admit the force of his conclusion. It does not follow, of necessity, from his premises. On the contrary, it is highly probable, that such a country might fall into ruinous despondency, and incurable apathy; and resign herself tamely to the mercy of foreign manufacturers, who may supply her wants, on their own terms. We have seen an instance of this, as I have said, in the present lamentable

mentable situation of *Spain* and *Portugal*; countries in possession of the precious metals, in abundance, and of all the means of carrying on manufactures to advantage. On the contrary, we see a proof of the advantages of a system of bounties, and protecting duties, in the present flourishing state of the linen manufacture in *Ireland*. No man will pretend to say, it would have attained to the state of perfection, which it now boasts, without the aid and protection of the legislature. The improvements, also, which the agriculture of *Ireland* has experienced, during some years past, furnish further arguments in favour of the system of bounties.

It does not follow, that the whole enhancement of price, or expence, to the consumer of any article of manufacture, by his being restricted to the purchase of a home fabric, though, perhaps, dearer in price, and less excellent in quality, is so much actually lost to him. He may pay dearer, it is true, for a yard of cloth, a hat, or a pair of stockings; because he is obliged to confine himself to the produce of his own country; and his coat, his hat, or his stockings may be less durable, than similar articles, with which he might be supplied by importation; yet if, by confining his expences within his own country, he contributes to encrease the quantity of money circulating in it, he will contribute, in proportion, to raise the rents of land, the price of provisions, and all other produce of land, the price of other manufactures, the price of labour, the price of all exertions, and productions of skill and genius, the reader will easily see, that it is most probable, nay, almost certain, that the individuals in question, must be concerned, in some one or other of these branches, and will derive more benefit, from thence, than he can possibly injury, judging from the enhanced price, or bad quality of the home manufacture, to which he is confined.

There is one other consideration, which is of high importance, and which may reconcile an enlightened legislator, to the system of bounties, and protecting duties; I mean, its effects, in a moral point of view; as being the means of furnishing employment, for the poor; and diffusing among them a spirit of industry, and habits of exertion. It is a trite maxim, but not the less true, on that account, that idleness is the nurse of vice, and the
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root of all evil. On the other hand, an industrious temper, and a spirit of exertion, are most favourable to sobriety, good order, and a display of all the moral dispositions, and christian virtues. It is hard to say, what price would be too great, to be paid, by a wise and virtuous legislator, for the general diffusion of such habits, and such a spirit. I think it is a great objection, to Dr. *Smith's* book, admirable as it is, in many respects, that he does not advert, sufficiently, to moral objects; but seems to form his theory wholly independent of them; and to underate the influence, and potency, of moral causes, in producing, or countenancing, the welfare of nations.

To close this section, with an argument of the utmost strength, and authority, I would request the reader to turn his eyes to the practice, and situation of *Britain*, with respect to her manufactures—What has been her policy, during the last century? Shall we be ready to condemn those maxims, as unwise, under the practice of which, a nation has prospered, beyond all past example, and grown, to such a stupendous degree of wealth, and greatness? The fleece, in particular, has been the boast and treasure, of the people of *England*.—We know, with what a tender care, and fond solicitude, they have cherished their woollen manufacture; and, with what jealous precautions they have studied, to guard the exclusive possession of this important source of national wealth, and prosperity. A similar spirit, and maxims of policy, dictated the famous Navigation Act;* to which, it must be acknowledged, that *Britain*, at this hour, owes the sovereignty of the seas: and, it is manifest, that all the abstract principles, of the wealth of nations, respecting the false policy, of prohibitory, and protecting systems, might be applied, with much plausibility, and gravity, to demonstrate the utter inexpediency of this grand measure, which has ever been considered, from the time of its enactment, as the corner stone of English greatness—of the magnificent structure of the British commerce, and naval power.

VOL. IX.

(X x)

SECT.

* The reader will see the grand effects of the *Navigation Act*, acknowledged, in a late publication of Citizen *Hauterive*, on the present state of *France*.

SECT. II.

Of Protecting Duties.

The course of my subject, naturally leads me to protecting *duties*.—Various grounds of objection, to this mode of encouraging manufactures, present themselves. The imposition of such duties, is not only objectionable, on the general principles of political economy, but there are additional prudential reasons against it, suggested by political relations, and the peculiar situation of *Ireland*.

* Protecting duties, imposed by this country, whether amounting to a prohibition; or only, (which would be a preferable course) tending, to place our manufactures on an equal degree of footing, in the home market, with those of *Britain*; would wear an invidious appearance, of hostility, against that country, whose jealousy, it would be imprudence in us, to excite; and whose affection, we should endeavour, to conciliate. We have suffered much, it is true, from the mistaken policy, and groundless malignity of the sister country, but, it is to be hoped, that those evil days of blindness, and illiberality are past; that, more humane and rational maxims prevail; and that the two countries, united, as they are, in fate, will open their eyes to see, that they have one common interest. An *Englishman*, if he is not blinded by his prejudices, must be sensible, that whatsoever enriches *Ireland*, must, ultimately tend to the strength and support of *Britain*. I would chuse rather to trust to the gradual operation of reflections and principles, than to encounter illiberality with illiberality, and resort to a system of protecting duties, inimical in its aspect, as to the part of the empire, to which we belong, and questionable, as to the benefit of which it may be productive.

I consider protecting duties, as tending to introduce supineness and carelessness,

* The Reader is again to be reminded, that this Tract was written, antecedently to the measure of a legislative Union.

lessness, fraud and extortion, among our manufacturers; to enhance the price, and deprave the quality, of our manufactures. Competition is not only the strongest incitement, to the exertion of skill and industry, in the workman; it furnishes, also, powerful motives, to induce him to content himself, with moderate profits, and to distinguish himself, by the fairness of his dealings, as the most effectual means of vanquishing his antagonist, in a struggle for pre-eminence in the market. Were we restricted, to the use of our own manufactures, in every instance; the immediate consequence would be, combinations among the master manufacturers, to raise the price of their labour. We should be obliged, either to recall the restrictions, which were the cause of this arrangement, or submit to be worse clothed and accommodated, than our neighbours, at an expence greater, than what they pay for commodities of superior quality.

There is a passage in *Young's* tour in France, very apposite, to shew, that monopolies, and prohibitory clauses, are not the most effectual means, of promoting manufactures. “At the fair of *Guibray*, I found the quantity of *English* goods considerable. A dozen of common plates, three livres; and four livres for a French imitation, but worse. I asked the man, (a Frenchman) if the treaty of commerce would not be injurious, with such a difference?—*c'est précisément le contraire, monsieur; quelque mauvaise que soit cette imitation, on n'a encore rien fait d'aussi bien en France; l'année prochaine on fera mieux; nous perfectionnerons, et en fin, nous l'emporterons sur vous.*—I believe he is a very good politician, (continues the tourist), and that, without *competition*, it is not possible to perfect any fabric. The frauds, and extortion of the master manufacturers, the dissipation, and combination for encreasing of wages, among the inferior workmen, where a monopoly is established, by law, must effectually retard the progress of manufactures.” It is smartly observed, by *Young*, that the party of the plough, never had a monopoly on its side.

Another reason, why I would leave the importation of all fabricks, whether British or foreign, free, is, that our manufacturers might be furnished with patterns of all that was most perfect, and estimable in manufactures,

by which means, the arts and fabrics of the country will be improved. Taste and skill have made a greater progress in most manufactures, in the sister country; industry and invention are stimulated to new improvements, by the large rewards, which an abundant capital is able to bestow. The constant demands of a vast imperial city, the residence of a splendid court; the fantastic arbiters of fashion, are perpetually suggesting progressive ideas to the manufacturers of *Britain*; and fancy is for ever on the stretch, to devise new modes, of carrying the texture and beauty of their fabrics, to greater perfection.

Adam Smith, though decidedly unfavourable to the system of protecting duties, in general, admits, that there is one case, which may be an exception to the general doctrine.—“It may, sometimes, be a matter of deliberation,” (says he) “how far it is proper, to continue the free importation, of certain foreign goods; that is to say, when some foreign nation restrains, by high duties, or prohibitions, the importation of some of our manufactures, into their country. Revenge, in this case, naturally dictates retaliation, and that we should impose, like duties and prohibitions, on the importation of some, or all of their manufactures into ours. In this consisted a great part of the policy of *Mr. Colbert*, who, notwithstanding his great abilities, seems, in this case, to have been imposed on, by the sophistry of merchants and manufacturers, who are always demanding a monopoly, against their countrymen. It is, at present, the opinion of the most intelligent men in *France*, that his operations of this kind, have not been beneficial to his country.

“There may be good policy in retaliations of this kind, when there is a probability, that they will procure the repeal of the high duties or prohibitions, complained of.—The recovery of a great foreign market, will generally more than compensate the transitory inconvenience, of paying dearer, during a short time, for some sort of goods. To judge, whether such retaliations are likely to produce such an effect, does not, perhaps, so much belong to the science
“ of

“ of a legislator, whose deliberations ought to be governed by general principles, that are always the same, as to the skill of that insidious and crafty animal, vulgarly called a statesman, or politician, whose councils are directed, by the momentary fluctuation of affairs. When there is no probability, that such repeal can be procured, it seems a bad method of compensating the injury done to certain classes of our people, by doing another injury, both to those classes, and to all other classes of them. When our neighbours prohibit some manufacture of ours, we generally prohibit, not only the same, but some other manufacture of theirs. This may, no doubt, give encouragement, to some particular workmen among ourselves, and, by excluding their rivals, enable them to raise their price in the home market. These workmen, however, who suffered by our neighbours’ prohibition, will not be benefited by ours. On the contrary, they, and all the other classes of our citizens, will thereby be obliged to pay dearer than before, for certain goods.”

It might, perhaps, be expedient, to protect the *Irish* manufactures, of woollen fabrics, and of stamped, and printed cottons, and calicoes; by a duty on *English* manufactures, in these branches, at least, equivalent to what is laid, on the like manufactures of *Ireland*, when imported into *England*. It seems to be but just, that when there are protecting duties in *England*, there should be corresponding protecting duties in *Ireland*, to put the manufactures of the two countries, on an equal footing; and to counteract the industry, which is employed by the manufacturers of *Britain*, to stifle the manufactures of *Ireland*, in the cradle, and to overcharge the market of this country, with their fabrics. But this is *periculosæ plenum opus aleæ*, the political practicability of such a measure is questionable, the economical expediency is doubtful.

I would instance, as an example of an injudicious application of protecting duties, for the purpose of encouraging a manufacture, a late tax of two pence per pound, on paper imported. In vain did the
printers

printers of *Ireland* represent, that the paper made in the country was wholly insufficient to supply the consumption. The tax was imposed; the printing trade, in this country, was nearly destroyed, and thus the paper manufacture was injured, not advanced, by the duty.

Doctor *Adam Smith* observes, "that can hardly be called improvidence in states and communities, which is prudence in an individual." And, hence he would infer, that states, like individuals, should repair to purchase those articles of manufacture of which they stand in need, wherever they can procure them cheapest. "It is the maxim of every prudent master of a family, never to make at home, what it will cost him more to make than to buy."—But the comparison between the individual and the community does not seem to hold entirely; and if any fair distinctions between them can be taken, the attempt of Doctor *Smith*, to apply the rules of private domestic economy to grand, political and commercial regulations, must fail. I say this, supposing it to be the fact, according to *Smith's* hypothesis, that individuals, in the ordinary dealings of life, uniformly resort, for the purchase of such manufactures as they want, to the market, where they can procure them, on the cheapest terms. This strict economy in buying, is far, from being uniformly, or even generally pursued, in the course of ordinary life.—The fact, (as every person must be sensible,) is, that, in the dealings of individuals, there are many considerations, which controul the principle of saving in price,—such as connection,—neighbourhood—friendship—the accommodation of long credit—the prospect of reciprocal advantage, in the sale of some commodity, in which the purchaser himself deals. Such, evidently, are the motives, by which the majority of individual purchasers, in private life, are governed, and, among farmers, it is obviously the practice of families, to manufacture at home, many parts of their apparel

But, supposing, contrary to the experience of every man who looks around him, that the individual goes to purchase what he wants, wherever he can procure it for the least positive sum, without attempting

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to manufacture it himself, and without any consideration of other circumstances; still it remains to be enquired, whether we must admit it, as a general axiom, in political economy, that, whatever would be excusable, or even prudent and proper, in the private dealings of individuals, would be sound policy, and fit to be adopted, in practice, in the regulation of states.—I shall mention, what I think, would be the fair parallel from private life, for the policy of states, and the economy of a legislator, in regulating the dealings of a commercial and manufacturing people.—Suppose a gentleman has an estate, wholly peopled by a manufacturing tenantry; and suppose, at some small distance, another gentleman has an estate, which is also occupied by persons who carry on a similar manufacture; it will become a question, on Doctor *Smith's* principles, whether it would be prudent and adviseable, in the proprietor of the first estate, to give a preference to the industry of his own tenants, and confine himself, and his family, to the consumption of the manufactures produced by them, although, from some cause or other, he might be able to procure similar articles, and of equal quality, somewhat cheaper, from the tenantry of the next estate; or, shall he, on the other hand, prefer the immediate saving of a few shillings in the year, on his different purchases of manufacture, to the encouragement of industry, among his tenants, for whom he is bound to feel a fatherly solicitude, and to a certain mode of facilitating and securing the payment of his wants? and while he supports the industry of the tenants of another proprietor, and aids them continually in the payment of their rents, shall he tell his own tenantry,—“ I will seize your stock—I will sell your furniture—I will
 “ tear your beds from under you,—but I will not use your manufactures—I can buy them cheaper elsewhere;—with every disposition
 “ to labour, you must go learn a new trade, or you must starve,
 “ or quit my estate, and seek your fortunes in *America*.”—I ask, would such conduct be humane?—Would it be christian? Would it be prudent? Nay, would it not be absolute madness, in the landlord?

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The state is that landlord; the people, at large are the tenantry; the rent they pay, consists in their ordinary taxation, and in their extraordinary exertions, in times of want and danger. Had Doctor *Smith's* principle of private economy, been uniformly applied to public conduct, by *England*, she would not flourish, as she does, in manufactures, at this day;—her woollen manufacture might never have existed. There was a time, when her manufactures were in their infancy, and those of neighbouring states, (as the *Flemings*, and others) cheap, and in high perfection. What became of Doctor *Smith's* principle, in the interval, while *British* manufactures were, as yet, imperfect, and, as I may say, serving their apprenticeship?—As the situation of individuals in society, though it is frequently compared to that of independent states, is yet distinguishable, in some respects, from it; so, there are strong reasons, which may lead us, to conclude, that many of the principles, which apply to the conduct of states, either in their internal regulations, or their intercourse with other states, may be different from those of private economy; and that the prudence, and good economy, of the individual may be wholly distinct, and of a very different character, from the prudence and economy of the community.

The first circumstance of distinction, which must strike the most indolent observer, with respect to individuals in society, is this.—Neighbourhood is generally the pledge of friendship and good-will. The very term *neighbour* is an amicable appellation, and the people, who inhabit the same vicinity, are usually disposed, to consider each other as of the same family; to support each other, in all their quarrels; to assist each other, in all their difficulties, and distresses; and, in short, to cement the union, begun in mere juxtaposition, by the practice of all manner of mutual good offices. Now, it will appear, from the uniform tenor of history, that, with respect to states, the direct contrary is the case; and that the mere circumstance of *vicinity* is, in itself, a constant source
of

of jealousy, envy, and animosity;—by producing usually a similarity of natural products, and, in consequence, a rivalry, in commerce and industry. We find that the very circumstance of neighbourhood, perpetually excites a secret ill-will, and a latent disposition to mutual hostilities. The words, *natural enemies*,—preposterous phrase! as if God and nature ever meant, that any human creatures should be enemies of each other.—What do they mean?—*Neighbours*—People to whom *vicinity*, is likely to furnish occasions of quarrelling, about their boundaries, or of rivalling each other, in commerce and manufacture.

There is another palpable difference between the individual, and the state, which will make it very necessary to distinguish between the principles and maxims of economy, which apply to them respectively—the individual is *transitory*—the state is supposed to be *immortal*. As the existence of the individual is brief, the principles of his economy will be cautious and contracted. He will confine his views to himself, and his family; *vetat spem inchoare longam*. He will grasp more, at immediate gain, and present savings; he will trust less, to speculation, and the promises of futurity. It is not so with states. They look to generations yet unborn, and build for eternity. Of course, their plans will not only be more extensive, but also on different principles. They will have greater inducements, to embark in speculations, to relinquish certain advantages, for great contingencies in prospect; to renounce immediate gains, and sacrifice the opportunities of present saving, to greater advantages in revolving time. Both individuals, in particular societies, and states, in the great society of the universe, are alike subject to a common head; but, the existence of the municipal superior, is more palpable—his authority is more an object of sense—the bands of his control are more closely strained,—his interference to maintain his dominion, and punish any violation of his laws, is more immediate. Hence it happens, in general, that the municipal laws of a nation, are more punctually observed, by the individuals, in civil society, than the laws of nations are, by independent states. Nations,

being thus left more to their own devices, run into greater excen-
tricities, and irregularities, with respect to each other, than indivi-
duals in society are suffered to do, by the civil magistrate. History
is filled with acts of outrage, unprovoked hostility, shameless infrac-
tions of treaties, black perfidy, committed by states against each other.
In civil society, the individuals rest under the protection of the laws,
secure against aggressions of this kind, on the part of their neigh-
bours; and act, in their common economy, as if they were always
sure of their amicable dispositions. They seldom suffer by their con-
duct. It is not so with states; they must act on a supposition, that
their neighbours are hostile. They must never be lulled into secu-
rity; and they must often counteract the malevolent, the impoli-
tic, and outrageous measures of their neighbours, by measures not,
in themselves, and abstractedly considered, prudent, adviseable, or per-
haps strictly moral; but, enforced by imperious circumstances, and
justifiable, on principles of self-defence, and self-preservation.

In all matters, which are neither enjoined nor prohibited, by the muni-
cipal law, the individual has an unquestioned and uncontrolled right, to
administer his concerns, to govern the interior of his family, as he
thinks best; to adopt what system of economy he pleases, and dispose
of his property, at his pleasure.—There seems to be but one rule, in
this respect;—"Use your own in such a manner, as not to injure the
property of another." It is very different, with the ruler of a state or
community, with respect to his system of economy. He must study po-
pularity, and aim at conciliating the affections of the great family, over
which he is set. His maxims of economy must, therefore, be very dif-
ferent, on this account, from those of the individual. He must, on
many occasions, resign his own ideas, and act in opposition to his better
judgment. He will consider, not, what is excellent, but what is prac-
ticable. He will not aim at chimerical perfection, and *Eutopian* hap-
piness. He will pursue the interests of society, as far as the passions
and

and prejudices of his subjects will admit ; but he will perceive, at the same time, the grand importance of pleasing his people, and keeping them in good humour. He will therefore make many sacrifices of his own opinion, and better judgment, to obtain this advantage, and conciliate their affections. A wise ruler will perceive, that if he can gain the affections of the people, the task of governing them will be easy ; and that all the wheels of the state machine, will go on smoothly, without any friction ; and it will be a point of good policy, to procure this advantage, at any reasonable expence. The government of a state, therefore, will not attempt, if it be prudent, what is positively, and absolutely, the best, but will adapt itself, to the prejudices of the people ; it is to govern, according to the circumstances and temper of the times. Where, for instance, the manufacturing part of the people, are so numerous, as to make a great part of the population of the state, they will be able to raise a cry, and to call the attention of government to their wants and wishes, in a tone of voice not to be contemned. We know how that wise minister, Sir *Robert Walpole*, abandoned his excise system, in deference to the public sentiment, convinced, as he was, of its excellence, in theory. He saw and felt, that abstract systems of perfection, obstinately pursued, in opposition, to what is practical, and practicable, will even do more harm than good. I might enlarge very much on this topic ; but, what has been already said, may lead us to examine, the solidity of the imposing and specious remark, that, “ What is prudent in the conduct of every private family, can scarce be folly in that of a great kingdom.”

SECT. III.

Establisbments for the prosecution of Trade, and Manufactures, by Government, or the Public, on its own Account.

In some countries, the government, or rich and powerful individuals, not being either merchants, manufacturers, or skilled in manufactures; from a well meant, but injudicious desire, of promoting commerce and industry, and furnishing employment, for the poor; have attempted to establish large and extensive manufactories, for the production of fabrics, on their own account. These vast and magnificent speculations, instead of proving serviceable to the country, at large, or any individual in it; prove uniformly ruinous to the undertakers, and injurious to the cause of general industry. They endeavour to confine in a hot-house, and rear to a premature growth, by forcing powers of artificial heat, a plant, which, if set in the open air and natural soil, and left to the free influence of the sun, and to the fostering rains and dews of heaven, would have spread largely, and yielded an abundant return; instead of exhibiting a sickly unwholesome vegetation, and affording a small produce, at a large expence.

There is something grand and imposing, no doubt, in the idea of being the sole proprietary of an extensive and flourishing manufacture; of the dispensation of employment, and bread, to thousands; of the inspection of their conduct, and distribution of rewards, to the exertions of their industry.—A very small portion of reflection will convince us, that the natural tendency of such schemes, so plausible at first sight, is to debilitate the energy, and waste the productive powers of the society; by transferring the employment of capital, from skilful to unskilful

ful hands, in consequence of which, the skilful hands will be paralysed or remain idle; while that part of the capital of the country, which, passes through unskilful hands, will either be dissipated in smoke, and wholly lost, or fail of producing that return which it would have yielded to the country. Thus, the nation sustains a total loss of all that the industry of the skilful, now unemployed, might have produced, if they had been employed; and, with respect to the capital misapplied, a loss, either total, by its being completely dissipated; or partial, by the smallness of the return, which it yields, through injudicious management.

The famous Earl of *Strafford*, when chief governor of this country, was actuated, by mistaken ideas, of this kind, respecting the establishment of the linen manufacture in *Ireland*, which may be called—

Plant of his hand, and offspring of his care.

He meant to have formed very extensive establishments, for the purpose of carrying it on at *Naas*, on his own account.

Sir *William Temple* proposes, “ that a sum of money should be kept ready, in the hands appointed by government, for taking off, at moderate prices, all such pieces of cloth, as should be brought in by any persons, at certain times, to the chief town of each county. Such pieces as are fit for sails, to be carried to the stores of the navy, all such as are fit for the army, to be given to the soldiers, in part of their pay. All finer pieces to be sold, and the money applied to the increase of the main stock.”—But this would come to the same point, of making the government a manufacturer, or, which is nearly tantamount, a factor, for the manufacturer. As to the supply of the navy, and the army; it is found, by experience, that all necessaries, for the one, and the other, can be most conveniently procured, by contract.

In *Spain*, the government has shown much solicitude, on the subject of manufactures; and endeavoured to promote the interests of industry,

dustry, and the arts, by large establishments of manufactures, to be carried on by government, on its own account. In this manner, great sums are annually lavished, which serve only to retard and injure, what it means to promote.

Townshend supposes, that the yearly loss by the porcelain manufacture, at *Buon-Retiro* is, 1,436,188 reals. The annual expence of the glass manufacture carried on, in like manner, by government, he states at 1,136,884 reals, and the loss by the cloth manufacture, of which government is the proprietor also, is extremely heavy. See what a diminution of the capital of the country, and, in consequence of the industry, which should be fed, and set in action by that capital, must result, from these annual losses!

A similar fate has attended a similar attempt of the archbishop of *Toledo*, as we find it stated, by the same writer. "The good archbishop," (says he) "here (at *Toledo*) feeds seven hundred persons, who are employed, in the silk manufacture; but, unfortunately, with the best intentions in the world, he has completed the ruin of the city. By his weight of capital, he has raised the price of labour; and of the raw material; while, by carrying so great a quantity of manufactured goods to the common market, he has so sunk the price of the commodity, that those, who used to employ from forty to sixty workmen, now but two or three; and those people, who are employed by the prelate, far from supporting themselves, require forty thousand ducats a year, over and above."

These examples, and the reasonings on them, will in some measure, apply to the course, which was pursued by the *Dublin Society*, for the advancement of the silk and woollen manufactures; and explain to us the causes, which have rendered the patriotic wishes and endeavours of that body, so unavailing, in this particular respect. *Young's* account of this matter appears to me so judicious, that I shall transcribe his words.

"To encourage the manufacture of *Irish* woollen cloths, and *Irish* silks, the society have two warehouses, where goods are sold, on their
own

“ own account, by wholesale, and retail, for ready money.* (This is
 “ not altogether the case, with the woollen warehouse; as it is now
 “ regulated, it is a depot for the goods of the manufacturers, of which
 “ the *Dublin Society* pays the rent, together with the salaries and
 “ wages of clerks, and other servants. But the principle is the same,)
 “ the intent of these institutions, (says *Young*) is, to take the weavers
 “ out of the hands of drapers and mercers, and let their manufactures
 “ come to market, without the deduction of the shop-keeper’s profit.
 “ One effect of this, is the taking the ready money, which is the most
 “ profitable part of their custom, from the draper and mercer,
 “ which, in fact, is laying a heavy tax on them. Now, it must ap-
 “ pear a strange mode of encouraging a manufacture, to lay a heavy
 “ tax on the master manufacturers.

“ All taxes, laid on a tradesman, in consequence of his trade, must
 “ be drawn back from his customers. The effect of this will be like
 “ that of any other tax, to enhance the price, and lessen the con-
 “ sumption. The tax is equal to the profit, the master manufacturer or
 “ shop-keeper could have made, by turning the sums, for which he
 “ gives credit to his customers. To reimburse himself, as I have said,
 “ he raises the price of his goods, to those who buy on credit, who,
 “ by means of the institution in question, become his only customers,
 “ for the home manufactures; but, the greater the price, the less the
 “ consumption; thus, the general consumption of the manufactures of
 “ the country is lessened, to let the ready money dealer have his goods
 “ a little cheaper.”

Master manufacturers, with that vigorous attention, activity, skill, and
 invention, which are the result of profitable business; are in every coun-
 try, the soul of prosperous fabrics. Their profit animates them to
 spirited exertions, on which the advance of manufactures depends.—
 Where are the men of taste to invent, of quickness and sagacity, to
 mark and follow the caprice of fashion?—Can we find them, among
 the

* This is not accurately the fact.

the working weavers? Absurd! We must look for them among the intelligent manufacturers.—Go to the weavers in *Spital Fields*, and see them, mere machines, directed by their employers, the mercers, since it is their capital, that set the loom at work, their taste and judgment that direct and regulate its productions.—What would be the effect, were the mercers of *London* to be rivalled by public money? The ruin of the silk manufacture.—What induces men to embark large capitals? —Profit. The greater the profit of a manufacture, the greater will be the capital employed in it; and the greater the capital, the greater quantity of industry will be set in motion. Thus, the direct tendency, of measures, such as I have stated, is to diminish the quantity of that industry, which it seeks to augment.

Another effect of establishments of this nature, is to raise jealousies among the different tradesmen, concerned in the manufacture, wherein they are employed. The drapers and mercers, (in *Dublin* for instance) are not pleased with the manufacturers, who work for the Society's warehouses. Jealousies of this nature must be detrimental to the manufacturing interests of the kingdom at large. Fortunately for the kingdom (as *Young* observes) the ready money trade is, by no means, equal to that on credit. The drapers and mercers support their trade, in spite of this formidable rival, backed with a premium of 2500*l.* a year appropriated to their ruin; and this in order to encourage the manufactures of the country! Such has been the effect, of the best intentions imaginable, injudiciously directed. In truth, aggregate meetings are not well calculated to preside over, or encourage industry. And this leads me to the next section.

SECT.

SECT. IV.

On Corporations.

Corporations flowed out of the feudal system; and were erected, and grew, under the countenance, and protection, of the ancient monarchs of Europe, as a counterpoise to the tyranny, the turbulence, and power, of their great barons. The security of property, and relative tranquillity, which they afforded, first gave rise to commerce and manufactures. This has produced a prejudice, in favour of corporations, and erroneous notions, on commercial subjects. It has been supposed, that the same measures, and institutions, which, in times of outrage and anarchy, were necessary to the very existence of commerce, and the security of the persons, and possessions of individuals, would, in times of peace, and good order, contribute to the extension and prosperity of trade. In those early days, the maxims of industry were ill understood: trade was in low repute, and capital was not generally diffused. It was supposed necessary to allure men to commercial enterprise, by exclusive privileges. The crown, too, was fond of overstretching its prerogative, and gratifying its favourites, by the creation of monopolies. We find, in the early part of the *English* history, even down to the unhappy reign of the *first Charles*, perpetual complaints of the gross prevalence of monopolies.

The predominancy of these notions, gave occasion to the marshalling and arraying, the professors of various trades, into exclusive companies, embodied, by charter, endowed with beneficial privileges, invested with extra-

ordinary powers of making laws and regulations for themselves, and possessed of a monopoly in the art they exercised. This very art was supposed to contain in it, certain wonderful *arcana*, some abstruse discovery, not to be communicated, except to such, as were duly initiated, by a long apprenticeship. Thus, the terms,—*trade*, and *mystery*, became synonymous.

Monopolies, and exclusive privileges, may have their use, while arts, and manufactures are struggling for their existence, and in their infancy; but they cripple the vigorous progress of their youth, and palsify the strength and exertions of their maturity. They confine manhood to the leading string, and the go-cart. It is now understood, that the most effectual mode of encouraging industry, is, to leave the exertions free, and suffer every man, to find out for himself, and pursue, without interruption, or molestation, that species of employment, which seems to him most likely to reward his labour, with a return of profit.

The monopolies, and exclusive privileges of corporations, guarded, as they are, by a number of bye-laws, are wholly inconsistent with that choice of employment, and freedom of exertion, which are the very soul of industry. In fact, we find the customs, and regulations of corporations, and guilds, proscribe industry, and the importation of capital, by the exclusion of deserving aliens. They are injurious to the true interests of commerce, and destructive of all improvement, in manufactures, which they tend to render stationary: for a fair and open competition is, of all things, most favourable to the diffusion of industry, and perfection of all the productions of art, while, on the other hand, it is the natural effect of a secure monopoly, to destroy the true commercial spirit; to perpetuate a culpable indolence, and total disregard, for advancement, and perfection of manufactures.

While corporations endeavour to banish, or proscribe, the industrious manufacturer, with his capital; or, if they do not totally drive him away, to raise a tax, on his labour, and exertions, for the emolument of their own members; they interrupt the exertions, and distract the attention of their own members, by the idle activity, and low cabal, of corporation politics. These scenes of caricatured intrigue, and plebeian ambition, produce riot, intemperance,

intemperance, and prodigality; diffusing themselves, through the whole corporation, from the traders, or manufacturers, who canvass for the honours, and employments, (which however mean they may be, and even ridiculous, and degrading, in reality, are always objects of desire, to certain people) down to the poorest elector. The experience of every one must furnish him with melancholy examples, of families ruined, by the intemperance and neglect of domestic concerns, which are the inevitable consequences of a sanguine pursuit of corporate honours.

In fact, corporations, are not only subversive of industry; they are too frequently injurious to the cause of morality, and become nurseries of debauch, perfidy, falsehood, and wrong, accompanied with gross speculation, if the corporation has any estate, or revenue. In all these corporations, there spring up a number of idle, and profligate persons, whose only merit is their being active partisans, the creatures of some persons in power, in the corporation. These gradually engross, to themselves, the management of the society; become its ruling members; dispose of its property, and regulate all its concerns, to the great prejudice, not only of industry, but of good morals, by their example and influence.

The inconvenience of exclusive privileges, and corporate monopolies, appeared so palpable, and so injurious to the cause of industry, that the legislature of this country, when they were disposed to encourage the linen manufacture, by law, found themselves obliged, to interfere with the privileges of corporations, and suspend them, with respect to that favoured branch of industry; the same principle which actuated the legislature, on that occasion, applies equally to every other branch of manufacture; and could people divest themselves of prejudice, and private interests, and meet the subject fairly, and boldly, should lead to a total abrogation of all corporate privileges, and distinctions, that lead to monopoly, and tend to shackle industry. The clause, to which I allude, is in an act of the 19th of George the second.

“ Every flax-dresser, hemp dresser, profest maker of linen wheels, professed maker of hatchels, being a protestant, (I could wish that incon-

(Z z 2)

sistent

“ inconsistent relique of illiberality had been omitted) shall be at liberty, to
 “ exercise his trade, in any city and town corporate; and, during his resi-
 “ dence, and following his trade therein, shall be deemed a freeman thereof;
 “ provided, that he shall not be at liberty to vote, at the election of any ma-
 “ gistrate, or of any member, to serve in parliament, for such town.”

In corporations there always exists, as I have said, a spirit of party, and a love of *jobbing*, (a name of great significance, denoting an evil, which is peculiarly prevalent in *Ireland*.) These contentions produce not only intemperance, and immorality, with beggary in their train, as I have mentioned, but also, personal animosities, and rancour, which are highly prejudicial to the interests of industry, by preventing the members of such societies, from assisting each other, in their labours.

We find the most flourishing manufactures are carried on, without the aid of incorporations, and exclusive privileges; such is the cotton manufacture of *Manchester*; such the hardware manufacture, through all its various extended branches, which is carried on at *Birmingham*; and such is the linen manufacture of *Ireland*; which has reached its present state of prosperity; by the vigour of individual exertion, a state which has few parallels; and this without any other aid, than the interference of the legislature, to prevent, or punish fraud, and encourage, by bounties, the importation of the raw materials, and the exportation of the manufactured fabrics.

Though I am unfriendly to monopolies, and exclusive privileges, I think, it may be necessary, in some instances, to depart from general commercial principles, in favour of patents, and chartered companies. In the infancy of commerce, most manufactures were carried on by companies. There were, in England, the companies of merchants strangers; the German merchants of the steel yard, (who were highly favoured by Henry third,) companies of merchants, of *Venice*, *Genoa*, *Florence*, *Lucca*, and *Lombardy*. It appears, that the art of throwing, spinning, and weaving silk, were brought into England, and practised by a company of women in London, who were called silk women. On a petition of this female company, to parliament, in the year 1455, representing, that the *Lombards*
 imported

imported into *England* such a quantity of silk manufactures, that they were in danger of being reduced to poverty; an act passed, (33 Hen. 6.) prohibiting the importation of any such articles, as were manufactured by the silk women.

In a poor country, where the spirit of commercial speculation, is not prevalent; where there is a deficiency of capital;—where the spirits of the people are low; and the projector apt to despond;—manufactures that may require a large capital, extensive, and elaborate machinery, and a costly apparatus; extensive experimental undertakings, which are attended with considerable risks;—all these are ill adapted to the temper and circumstances of such a country. Individuals, will be deterred, by the heavy preliminary expence, which must be incurred, antecedent to any operation of the manufacturer, or any hope of profit; and the fear of total ruin, should the undertaking miscarry. There are works of great promise, both as to public utility, and private emolument, which, even in thriving countries, and amidst the abundance of capital, exceed the means of the generality of individuals, and are of a character so hazardous, that it would be unwise in any individual, to embark his whole capital in them. Such is the working of mines, the forming of canals, a great iron work, an extensive cotton work, and a colliery.—In a great iron work, for example, the houses, and furnaces, for melting the ore, the forges, the slitting mills, the steam-engine for working the bellows, are instruments of trade, or manufacture, which cannot be procured without heavy expence. So, in a mine of any kind, the timber for propping the excavated ground, the machinery of various kinds, above all, the steam engine, for discharging the water, are highly expensive. The machinery, in a cotton work is scarcely less so. In all new undertakings, of formidable aspect, from the great preliminary expence, which they necessarily require, and the heavy contingent losses, to which they are exposed; people, in rich commercial countries are in the same predicament (as to those particular instances) as all people were, in the infancy of commerce, with respect to manufactures, in general, and in all such cases,

cases, it may be wise, to secure to the inventor of any new art, or improver of any art already known, a monopoly in his invention or improvement, for a certain period. It may be wise, to encourage individuals, to join their capitals, to form themselves, into companies, and to cement their association, by charter; that undertakings which exceed the means, or the courage of individuals, may be assailed and conquered by united strength; and that, if any failure should be the consequence of their speculation, that loss, which would have depressed an individual, to rise no more, and deprived society of all his future exertions, and industry, may be lightly borne, when distributed through the capitals, and resources of a large number of individuals, who compose the association.

SECT. v.

On the Maximum in the Price of Labour.

It is a misfortune, which attends all questions of commerce, and manufacture, that they are too liable to partial consideration. The interests of individuals, or of particular classes, will unavoidably, start forward, and become such prominent features, that they will stand in the way of free discussion, and enlarged views of policy. The merchant thinks, the peculiar branch of traffick, in which he is engaged, ought to be the object of prime consideration, with the legislature; and instructs his representative to oppose any impost, or regulation, that seems to militate against it. The manufacturer thinks, that the trade, or calling, by which he thrives, should be guarded, as the palladium of the country; that it should be held sacred, from prophane intrusion, with religious mystery; that it should be fed with sacrifices, and pampered with bounties. Of manufacturers, again, that exercise the same
art,

art, there are two classes ; and these differ as much, in their notions, and according to their confined apprehensions, in their interests, as those, who deal in two distinct, and separate trades : the master manufacturers, and the working manufacturers, or journeymen. The object of the master, is, to get as much work for as little money, as possible ; of the journeymen, to get as much money, for as little work as possible. It is the object of the master, to fix the maximum of labour, and to make this maximum as small as possible. To effect this, he endeavours to obtain the aid of the legislature ; and to establish such laws, as that in *England*, which empowers two magistrates, to fix the price of labour. He obtains penal laws, to restrict and punish all meetings and combinations of the journeymen, for the purpose of demanding, and enforcing, an increase of wages. He endeavours, to reduce his refractory workmen to his own terms, by taking an extraordinary number of apprentices, and inviting strangers into his employment. The workmen endeavour, to conquer their employer, and traverse his views, by refusing to work ; by associations, and contributions, to support each other, in this refusal ; by combinations, to limit the number of apprentices to be taken by one person ; and, by threats, and outrage, they attempt to drive away strangers from the service of the master manufacturer ;—great outcries are raised, on both sides ; and mutual recriminations thrown out : the insolence, the intemperance, and riotous conduct of the lower classes, furnish topics, of complaint, and declamation, on the one hand ; the high price of provisions, the inadequate price of labour, the oppressive conduct of the employers, are magnified, on the other.—There may be some truth, in the allegations, on both sides.*

How is the controversy to be adjusted ?—by introducing the law of the maximum ; a law introduced in *France* under the tyranny of *Robespierre*, and which was attended with consequences most baleful to industry ?—No ; the interference of the legislature, to fix the price of labour, is, in all cases, injurious, and improper. If it fixes the price of labour too high, the master
manufacturer

* See the interesting debate, on a motion introduced by Mr. Whitbread.

manufacturer is injured ; his profits, from the manufacture, become so small, it will not be his interest to carry it on, and he will discharge his workmen ; if, on the other hand, the price of labour is fixed too low, and the workman is restrained, by penalties, and punishments, from seeking an increase of it, the labouring poor must starve. They will desert an employment, that no longer yields them a subsistence. In either case, the manufacture is ruined. Where shall we find the golden mean, which gives, to the labouring mechanic, sufficient support, for himself and his family, to reward his industry ; while it leaves, to the master manufacturer, sufficient profit to his exertions ; and allows him to supply his manufacture, on such reasonable terms, as enables him to enter the foreign market with advantage ?—What may be a high price of labour, in one country, * may be a very moderate one in another. The price of labour, in agriculture, must fix the price, to a certain degree, in every other department of manual industry. This price varies, in different counties ; and, in the same county, may vary at different times of the year. The price of the necessities of life, the population of the district, a variety of other circumstances may operate, to vary the true criterion of a *maximum*.—What, then, is to be done ?—Let not the legislature attempt to fix an uniform *maximum*, in an article so various, and so fluctuating in its nature.

Labour is like every other commodity, where the wants of man are compensated by money. The want being of a necessary, the legislature should not interfere, to fix the price ; it should leave it to find its own level. It may interfere, indeed, to keep the level free ; it may prevent its being choaked up, and interrupted. The master should be left, to make the best bargain he can, with the workman ; the workman to make the best bargain he can, with the master ; but the legislator may interfere, and, indeed, it is his duty to do so, to prevent all fraud, imposition, or oppression, on the one hand ; all turbulence, combination,

* The wages of Artificers in America, are now extravagantly high.

combination, and dishonesty on the other; to these objects alone should the hand of regulation be extended.

The security of property is one of the great objects, for which men unite in society. This object should be held sacred, by every legislator, as far as is consistent with the support and well-being of the community. The labour, the exertions, the talents of every man are his private property, and should be preserved to him inviolate, except so far as he agrees to sacrifice a portion of them, to the support of government, and to the exigencies of the state. But, this portion should only be taken, with his own consent, otherwise there is no liberty, or security of property. The free possession of property necessarily implies that the owner shall have the power of employing it, as he pleases, consistently with the public safety; Of the most profitable and expedient manner of employing it, he should be left to judge for himself.

Schemes for fixing the price of labour, have their origin in tyranny; are subversive of freedom, and contrary to the principles and rules of property. Demand, and price, reciprocally fix each other; if there is an uncommon demand for workmen, their wages must be proportionably high. It is just, also, that the expence of provisions, and the difficulty of procuring subsistence for the peasant, or the artificer, and their families should be taken into the account; and their wages ought to be augmented, with their necessities. Were the same price of labour to be established uniformly through the kingdom; it would be an intolerable grievance, to such of the industrious poor, as are settled in the vicinity of the capital, and other large towns, where constant demands render all necessaries of life, particularly of food, and lodging, dear. Its effect would be to banish the poor from these neighbourhoods, since, the same sum of money would purchase double the quantity of necessaries, in other parts of the kingdom, where, by reason of the scanty population, and remote markets, the necessaries of life are twice as cheap, and he can live twice as well, at the same expence.

It follows, that, in justice, the price of labour should be greater, in the neighbourhood of the metropolis, and other large and opulent towns, where living is dear, than in remote provinces, like *Connaught*, where there are few, or no large towns, and living is remarkably cheap. The fact is, that the price of labour does, in some degree, find its own level ; and, that, partly demand, partly the relative dearness, or cheapness of provisions, determines this level. I am told, that on the canals, and public works in the vicinity of Dublin, a labourer is paid eighteen pence a day,* while, in *Connaught*, he thinks himself rich, on sixpence a day, which is more than the common rate of the country.

In objection to the admission of dearness of provisions, as a criterion, for fixing the price of labour ; I have heard it remarked, that, in the *North of Ireland*, which is the great manufacturing part of the kingdom, the price of labour is lower, in dear and scarce seasons, than, in those of plenty, and cheapness. But I speak of a regular, and permanent dearness ; and, therefore, to be provided for, as affording a criterion, for the price of labour. The case is different, with respect to an accidental season of scarcity, coming unexpectedly, and pressing with severe, and unrelenting urgency. There, the artificer is taken by surprise ; he expects, that this year will be abundant as the former ; he has made no saving, from his earnings ; he has accumulated no store ; he is wholly unprepared, to wrestle with famine.—How shall he bide the pelting of the pitiless storm ? all the horrors of want, and despair come on him, like a thief in the night ; he is surrounded by a troop of famished wretches ; and, unable to relieve the importunate calls of hunger.—The spirit of gain is unfeeling ; the master manufacturer sees his necessities, and takes advantage of them ; (perhaps, the artificer himself had provoked him to retaliation, by arrogance, and extortion, in the hour of fulness) he imposes on him conditions ; he makes him labour, at a rate, which, in times of more abundance, when he could have remained idle, and tolerated existence, at a small expence, he would have rejected. †

But

* It has since risen to two shillings.

† We had no combinations in Dublin during a season of distress ;—they exist now.

But though every intelligent person, who considers the subject, must be convinced of the impropriety of a legislative interference, to fix the price of labour; it must be acknowledged, that the wages of the peasant are by far too low,, in almost every part of *Ireland*. Six-pence a day are by no means adequate, to the support of a man and his family. This low price of labour, not only makes the peasant wretched, but, operates universally, to the discouragement of manufactures. *Young* observes, in his tour in *France*, that there prevailed there, in most places, a poverty, that strikes at the root of national prosperity. A large consumption amongst the poor is of more consequence, than among the rich. The wealth of a nation, lies in its circulation and consumption; and the case of poor people abstaining from the manufactures, of leather and wool, is an evil of the first magnitude. It reminded me (says the Traveller) of the misery of *Ireland*.

It will be difficult to point out any scheme, for the encouragement of manufactures, so effectual, as an amelioration of the condition of the labouring poor, in general. For this end, we should begin, with increasing the wages of the peasantry, at present unaccountably low. Were the poor better lodged, cloathed, and fed; did they display more utensils, and furniture, in their habitations; they would give employment, to a large additional number of manufacturers; they would open an extensive consumption, of linen and metallic manufacturers, of carpenters work, and articles of furniture; but to encrease this consumption of the poor, which, as has been justly observed, is of more importance, than the consumption of the rich, the means of the poor must be encreased, by augmenting the price of labour.

There is a peculiar advantage, in the consumption of the poor. In the first place, it consists more in home productions, and less in imported luxuries, than that of the rich. In the next place, it not only brings the market to the door of each manufacturer, by the demand of his neighbour; it produces also, in addition, a profitable re-action, a reciprocation of exertion. Through the mutuality, of superfluities, and wants, the peasant, or manufacturer, who takes any

article of cloathing, any tool, or utensil, which he wants from his neighbour, probably gives him, in exchange, something of value, which he himself has reared, produced, or made, and receives, or pays the difference in money. The peasant gives a pig, potatoes, or corn to the weaver, and receives linen for shirts, in return. The weaver of linen, goes to the weaver of frize or flannel, and barter with him, in like manner. The shoemaker, or the hatter, goes to the carpenter, and exchanges shoes or hats, for a bench, a chair, a table, or a bedstead. Thus, the labouring poor, mutually excite each other, by example, and reward, to the exertions of industry. Premiums and bounties, drive manufactures into channels, which are not yet prepared for their reception. The silent, insensible operation, of physical and moral causes, gradually leads them, in the most salutary manner.

Though I am an advocate, for encreasing the wages of the labouring poor, I do not wish to see the augmentation made, by the interference of the legislature. I wish to see it proceed, from the wisdom and humanity, of the gentry and opulent farmers, through the country, acting according to circumstances, and adapting themselves to the peculiar situation of each particular neighbourhood. Were the legislature to interfere, it must proceed on general representations, and be guided by some common rules, applicable indiscriminately to all cases. It cannot provide for the mischief, in detail; or advert to all the local circumstances, which ought to vary the price of labour, perhaps, in every barony in the kingdom. One common rule would do too much for the poor, in some places; too little in others. It would be as injurious to the country, to do too much, as too little. Were the price of the peasant's labour too high, it would operate, as a tax, on the industry of the farmer; he would employ fewer hands, in the cultivation of his farm; he would make fewer experiments in agriculture; he would not keep his grounds and enclosures so neat and trim. Thus would he be enabled, to discharge a number of his labourers;

labourers; so that the fixing the price of labour too high, though intended for a benefit, would be a real injury to the peasant himself. The variations of wages, determined, according to a compound ratio, of what the price of provisions, and the scarcity of workmen require, on the one hand, and the profits of farming will bear, on the other; though differing, from each other, in different places, by a small fraction only, will, nevertheless, through the whole extent of a country, or a province, and the whole duration of a year, have a very sensible effect, in the encouragement or discouragement of industry.

By the present pressure of the times, and the increased expence of living, the poor of every description are sorely pinched:—"Marriage" is discouraged (I use the words of Mr. *Pitt*, speaking of England) "and in the domestic circle, the birth of a child, instead of being" considered as a blessing, is regarded as a curse. To enable the manufacturer to feed, clothe, and lodge his wife and children, and prevent the youth of the country from being driven into the army and navy, for subsistence, it is necessary to augment the price of labour." But let this be done by the operation of principles.

When the legislature has proceeded, to fix the price of labour, and restrained the workman, from trying to augment it; it has been governed, by an idea, that large bodies of men, by conspiring to raise their wages, may injure industry, and leave no room for superior exertion and excellence. When this legislative interference succeeds, it only does what might better be effected, by principle, were labour left to find its own level. When it fails, it produces, on the one hand, the severest oppression; it encourages, on the other, the most profligate idleness and extravagance. This interference, has shackled industry; and the best intentions produced the worst effects to trade; fettered the circulation of labour, and substituted a system of complicated abuses, in place of the abuses it means to remove. This is a subject which, of itself, would require a volume; and, conscious of my inability to do it justice, I shall not add any thing more, but proceed to the subject of the next section.

SECT.

SECT. VI.

Of Foundations.

Among the various measures, that are subservient, or beneficial to the flourishing state of manufactures, that, of providing for the ease, comfort, and subsistence of the labourer, and the peasant, when age, sickness, or other causes, shall have rendered him incapable of supporting himself, holds a distinguished place. Such provisions, not only afford relief to the old, but a lesson and incentive, to the young. They shew them the respectability of honest labour, and teach them, what an estimable rank they hold in society; yet, is the regulation of this matter attended with difficulties, almost insuperable.

The poor's rate in *England*, was, no doubt, originally devised, with an intention of providing for this object, of true policy, and sublime benevolence; but, connected as it is, with the present laws of settlement, it is become the means of a most injurious, and impolitic restraint, on industry, and a burthen on the public nearly intolerable. The oppressive laws of settlement, prevent the workman, in *England*, from going to that market, where he can dispose of his industry, to the best advantage; they prevent the *capitalist*, from availing himself of his *capital*, and employing it, to purchase labour, on the best terms; and thus, they fatally injure the industry of the country: but the poor's rate and settlement laws, are not only grievous to the poor, and prejudicial to industry; they are a cruel burthen to the public, both by the vast and dreadful amount of the tax, and by their proving a source of endless litigation, and of the most scandalous contentions,

tions, directed to one sole object.—The restraint of the poor from the enjoyment of their natural liberty, and the free use of the talents, which God Almighty has given them. Half the modern books of law reports, are filled with settlement cases. If these regulations were ever founded in wisdom, and adapted to the situation of the country, which may well be questioned, it must now be confessed, that they require the correcting hand of the legislature.

Alms-houses, and institutions of that kind, like the *hospicio*, in *Spain*, which, at once, support those who are past their labour, relieve the indigent, protect the orphan, furnish employment to the industrious, and shut up and correct the idle, present themselves to the benevolent theorist, in a most favourable point of view. But even the *hospicio* at *Cadiz*, though, perhaps, one of the best-imagined institutions of the kind in the world, and (as *Townshend* says) the best conducted in *Spain*, is found liable to many objections; and fails, in various respects, of answering the ends proposed.

In all public foundations,* for the relief of the poor, much is proposed and little accomplished. A small proportion of public good is purchased, at a very heavy public expence. There must be rules and regulations; these rules and regulations must be enforced, by inspectors; but who shall inspect the inspectors themselves? Society has not always the same wants. The nature and distribution of property, the opinions, the manners, the division into orders, or classification of the people may vary, at different periods; yet the *foundation* remains unchanged, and permanent; founded on and adapted to a particular aspect of all these; on maxims, relations, wants, and interests, which no longer exist. Thus, the crusades gave birth to a variety of religious foundations. There was a certain state of society, learning, and manners, when monastic institutions might have been attended, with solid advantages to the world; though, in the present state of society, their utility can hardly be considered as problematical. The protestant character

* Section on morals and public instruction.

ter schools of *Ireland*, originated, in a necessity either real or supposed, resulting from the peculiar state of the country, of disseminating that religion, which was thought to be intimately connected with the adherence of this country to the side of *England*. In the present state of society, and of public opinion, the utility of those foundations, conducted, as they are, at this day, on the obsolete maxims of former prejudices, or, if you please, emergencies, may (as I have already observed) well be questioned. The proportion of those, who remain in society, is perpetually varying, and the utility of foundations, which ought to be adapted to the different circumstances of society, must vary in like manner.

Most of these establishments, survive their utility a long time; first, because there are always men who profit by, and are interested to maintain them; secondly, because, although a person may be convinced of their inutility, it is necessary to combat prejudices, to take measures, and observe formalities, before you can proceed to overwhelm structures, which have stood for ages. Thus, foundations have frequently become actively pernicious, for a long time, before men could be brought to agree, that they were even useless.

This should be a strong reason, to make us slow, in proposing the permanent establishment of a foundation, however plausible it may appear in theory, because there is a certain prospect, that, however it may be adapted to present circumstances, and prevailing opinions, it may, one day, become useless, perhaps, pernicious; and continue to be injurious a long time, before it is abolished.

Another thing to be considered, is the luxury and pomp of building, of which foundations are generally the parents. The number of proud, luxurious, opulent servants of mendicity and misery, whom they maintain in state, lodge in palaces, and train about in equipages. Cast your eyes, on the buildings erected, for almost any public purpose, you will see what a large portion, and that the most splendid and best part of the edifice, is occupied, by the officers of the public, or the
servants

servants of the institution!—A laundress—a steward—a providore—a matron of an hospital, or a poorhouse, is often lodged in apartments, that might serve a prince, and enabled (out of the funds intended for the lame, the blind, the aged, and the orphan) to run the whole career of fashionable dissipation, on an income adequate to the maintenance of an hundred paupers, or a dozen professors, of elegant accomplishments, or useful knowledge.

There is a method of providing for the wants of the poor, without burthening the community; without the glaring parade, and wasteful ostentation of charity; a method, which executes itself, and is adapted to all times and seasons, and which, while it provides for the future wants of the peasant, or the artisan, stimulates him to redouble his industry, at the present moment, and teaches him a wholesome lesson of frugality, by leading him to hoard up a small portion of his daily earnings; I mean the institution of beneficial societies, to which every man contributes a certain weekly sum, to form a fund, for mutual relief, in the hour of distress. Such institutions have become very general, in *England*, and they deserve to be promoted, and diffused, in this country, by every aid, that the countenance and protection of the legislature, can afford them. Let us imitate the example of *England*, where friendly societies for mutual relief, are now regulated by law; and provident societies, which are voluntary, established in most towns.

These establishments for mutual aid, possess many advantages, over public foundations. They do not interfere, with the freedom of the individual. They do not impose a burthen, on the community. They are cheerfully maintained, because they are freely established. They do not necessarily lead to profusion, or include in themselves a principle of corruption, and malversation. The plan is simple, and the execution of it easy. The fund will be managed with fidelity, and administered, with economy; because, the persons to be benefited by it, and who are therefore interested in its continuance, and increase, are themselves the administrators. Foundations must proceed, on general rules

and will, therefore, do either too little, or too much, for the objects of their aid. Institutions of the kind, I now mention, will enter into the spirit of each particular case of distress, and proportion exactly the quantity of assistance to the emergency. Were such institutions to prevail generally, they would prove a means of cementing man to man, by the bonds of love, and acts of benevolence. They would improve and soften the heart, by cultivating the human affections, and tender sympathies; and teaching man to melt, at the distresses of his brother. I propose not to enlarge, here, on the form, and regulations, which may be proper to be adopted in such establishments. I content myself, with suggesting the measure, in general, to the wisdom and benevolence, of those who feel, for the distresses of the labouring poor; and for useful details, referring to the various publications on this important subject.

Work-houses are favourite objects, in the class of foundations, with political economists; and the use of them is very general in *England*. I fear, they are seldom productive of as much good, as is expected from them. Public bodies being deficient in watchfulness, activity, and zeal, labour under a disadvantage; and will never find a vent for the commodities manufactured in them. Hence arises one argument against such establishments. But, although strong, it is, by no means the strongest, because, universally, people who work in confinement, eat too much and work too little.

To conclude this head, I believe, if we look into the public foundations of the country, one with another, and estimate the real public utility which they bring with them, we shall pass a favourable judgment, if we value that public utility, at a hundredth part of the public expence. I speak here, with a reserve in favour of such noble institutions, as a Foundling Hospital, and a Lying-in Hospital. No change of times, or fluctuation of manners, can depreciate their utility. Nor do I speak of county infirmaries, or hospitals for the reception of sick
and

and wounded. Such foundations are absolutely necessary, for the relief of the poor ; and they are productive of much improvement, in surgical skill, and medical science.*

* When the nation is poor, (says Montesquieu) private poverty springs from the general calamity, and is, if I may so express myself, the general calamity itself. All the hospitals in the world, cannot cure this private poverty. On the contrary, the spirit of indolence, which it inspires encreases the general, and consequently the private misery.— Henry the VIIIth, demolished monasteries, and hospitals, where the lower sort of people found subsistence. Since these changes, the spirit of trade and industry have been established in England.

C H A P. III.

Brief Notices respecting the Encouragement of specific Manufactures.

SECT. I.

Of the Linen and Hempen Manufactures.

To set industry in motion, three things are requisite,—materials, to work upon—tools to work with, and the wages or recompence for which the work is done. To the certain attainment of the latter, a regular market is necessary. The encouragement of any manufacture consists in the providing for the attainment and security of these three objects united.

With respect to the linen manufacture, the *primum* of which is, or may be produced, at home, by encouraging the farmer to grow flax, in every part of the kingdom; but also to secure, if possible, an abundant and unfailing supply of flax-seed, within the country itself, independent of foreign aid. At present, though we grow the *primum* of the manufacture ourselves, we chiefly depend on *America*, for a supply of flax-seed; and in case of any rupture with that country, at a future day, the consequences to *Ireland*, in the total ruin of her staple manufacture, would be fearful indeed.*

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* The price of flax-seed has varied, from three to seven guineas per barrel.

It should be the care of the legislature, to put this precious manufacture, on which the very existence of the people of this country depends, out of the reach, if possible, of time and chance. To forward this great and desirable object, the farmer should be induced, by premiums, to cultivate flax, not merely as the *primum* of a fabric, but for the purpose of saving the seed. This appears, to be a very profitable species of husbandry; and, were it generally pursued, might relieve us from the apprehensions of a scarcity. I know it is supposed by many, that flax-seed, produced in this country, is inferior in quality, to that which is imported. I am apt to think this a mere prejudice, at least, it is an enquiry well deserving the attention of this country, to ascertain the truth; and determine, by a course of experiments, whether flax-seed, sowed in this country, does not afford as abundant crops, and flax of as good a quality, as seed, which is imported, from abroad. If there were any overplus of seed beyond the demand of the flax grower, it might turn to good account, at oil mills.

Having secured the linen manufacturer against any failure of his raw material, the public attention should next be directed, to the perfection of the instruments and machinery, by means of which the different operations of the manufacture are performed. We see to what an astonishing pitch of prosperity the application of improved machinery has carried the cotton manufacture. Might not a knowledge of the mechanic powers be successfully employed, on the various instruments, and machines at present used, in dressing and preparing flax, for the spinster?—In spinning the yarn?—In making thread, for the use of hosiery, or for sewing?—In weaving the various kinds of linen webs? It is not impossible, that the different instruments at present in use, may be susceptible of very great improvements, either tending, to facilitate the several operations to be performed by them; or to produce the commodity, which is the fruit of those operations, in a state of greater perfection. Is it not possible, that some machine, like the spinning jenny,
might

might be employed, in a more compendious mode of making linen yarn? Might not the rollers of *Arkwright's* water machine be employed, with good effect, in making the warps of fine cambricks? Might not the patterns of diapers be much improved, by some attention to the art of drawing and designing? Might not the arts of dying, stamping, and colouring linens and cambricks, in various ways, be much improved, by an attention to the nature and combinations of colouring substances?—May not the art of bleaching be carried to a much greater degree of perfection, than it has yet attained?—These, and various other interesting enquiries, which might be suggested, ought to engage the care of the scientific head, and experimental hand. We should not suppose, from the present prosperity of the linen manufacture, that we have reached the utmost bounds of perfection.

The next measure in order, for the extension of the manufacture, is to find markets, for the finished fabric; and to bring them home, as near as possible, to the door of the manufacturer. I know not any means so effectual, for the attainment of this end, as the vigorous execution of the plan, which occurred to the legislature of this country, many years ago, but has not been properly followed up, in practice; I mean the establishment of a *Linen Hall*, or public ware-house, for the wholesale market of linens, in each county town, in this kingdom. The idea was well conceived; but, as I have already observed, the sum which the grand jury was authorized to present, was wholly insufficient for the purpose. The deficiency, however, might be supplied, and probably, with more profit to the manufacture, from the funds; which are now expended in bounties, on the exportation of linens.

The establishment of linen halls, is a measure, which has been attended with the most beneficial consequences, wherever it has been adopted. By means of these establishments, the market is not only brought home to the door of the manufacturer, whereby he is saved a considerable expence, in the bringing his productions to a mart, and enabled to sell them proportionably cheaper; but is rendered more advantageous to him, in the points of circulation of commodities, of number

ber of buyers, and regularity and certainty of demand. It is of the utmost advantage, to the prosperity of a manufacture, that the manufacturer should have a certain place, to which he may convey, and wherein he may deposit his goods, in full assurance of finding a purchaser; it is of the greatest consequence to the buyers, to be assured, that there is a market, to which they may resort, for the different fabrics, which they require, to furnish their shops and warehouses, without any fear of a disappointment. The manufacturer is encouraged, by the certainty of purchasers, to fabricate goods, in greater quantity. The purchasers are encouraged, by the quantity of manufactures, to resort to the market, in greater numbers. These established markets are beneficial to the manufacture, in another respect: they render the work of regulation and inspection more easy, they facilitate the detection of all frauds; and tend to establish a fairness in dealing, that inspires the purchaser with confidence. And nothing is so favourable to a commercial intercourse, and to the prosperous circulation and improvement of a manufacture, depending on it, as this confidence, and good faith, subsisting between the buyer and seller.

It is true, some writers have declared themselves unfriendly to the general extension of the linen manufacture. It has been said, no great or populous country ever thrived, by a single manufacture. *Young* has declared, "that, were he proprietor of an estate, in the south of *Ireland*, he would 'as soon introduce pestilence and famine, as the linen manufacture, as carried on, at present, in the north of *Ireland*." Because, indeed, the existence of the manufacture, in its present state, contributes to the division of land, into small farms, which, as he pretends, introduces bad modes of farming. But surely the encreases of that, which, in its present extent is acknowledged to be the chief source of the prosperity of the country, cannot be injurious. The manufacture can never be said, to be overstocked, with hands, or to draw to itself too much of the capital of the country; while an easy vent is found, for the fabrics, which it produces. Indeed, when the linens
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of *Ireland* lose their price, when the demand for them is slack, and the linen market appears to be glutted; then, indeed, it will be time, to think of restraining the extension, of the linen manufacture. With respect to the south of *Ireland*, such is the utility and profitable nature of the linen manufacture, and such the aptitudes of the soil of *Ireland*, particularly, in the more fertile counties, for producing flax; that the linen manufacture, without care or encouragement, has spread, with a silent, unobserved progress, through the whole province, is become an object of great importance, and is prosecuted, (though without connexion or system, or the employment of large individual capital) to a vast extent, by the industrious poor. Inasmuch, that there is not a town in *Munster*, where considerable quantities of coarse, unbleached* linen, the manufacture, of the vicinity, are not exposed for sale, on a market day. So that the question is not, whether, we shall extend the linen manufacture; for it is extended already, over all parts of this kingdom; but, whether we shall methodize and regulate the prosecution of it:—whether we shall prune and bind up the luxuriant shoots; and give form and order, to what now runs wild.—As no hesitation can remain; the utility of establishing a linen-hall, in every county-town in *Ireland*, must be acknowledged. The obvious utility of promoting the establishment of bleach-greens, in *Munster* and *Connaught*, is equally apparent.

It must be further observed, that, although the linen manufacture is the great staple of the country, and in such a flourishing state; there are some of its branches, minor branches, it is true, yet still objects of constant demand, which are either wholly neglected, or imperfectly pursued, in *Ireland*. Such is the manufacture of sewing threads—of the finer kinds of tapes, and other fabrics of that kind; for which, we are chiefly dependent, at present, on *Holland* and *Flanders*. Such the manufactures of thread lace, and edgings, and of fine cambric. An attempt was formerly made, to establish the manufacture of this last fabric, at *Dundalk*;

* Particularly a narrow kind, called by the country people, bandle-cloth, from the measure employed by them.

dalk ; but, from some error in the plan, (chiefly, as I believe, from its proceeding on the erroneous idea of being a public manufacture) it proved abortive. Some of those neglected branches of this manufacture particularly deserve the attention, and encouragement of the public, because they are particularly calculated, to furnish employment, for women and children, and might be advantageously carried on, in orphan-houses, and other public seminaries of industry.

Yet, though I profess myself an enthusiast, in favour of the linen manufacture ; and so sanguine in my expectations from it, that my imagination cannot set bounds to the extension, of which it seems to be capable ; or to the wealth and prosperity of which it may be productive to the community ; I must say, that, in the present state of advanced maturity, to which the linen manufacture has arrived, in *Ireland*, I cannot see the necessity, for continuing to support it, with bounties and premiums. The utmost, that could be expected from the legislature, would be to admit, free of expence, the *primum* of the manufacture, the seed, from which it is raised, and the materials of bleaching.

The linen manufacture having continued to flourish, for a century, and advanced to perfection and vigour, is, as I have observed, in a former part of this essay, superior to all danger from rivalry. Some attempts in this branch, have been made in *Scotland*, but they are not considerable enough, to excite alarm. The encouragement given by the *British* government contracts, to the coarser flaxen and hempen fabrics, of *Silesia* and *Russia*, perhaps, in departure from the original compact, which secured to our linens the possession of the *English* market, is insufficient to make any impression, on the prosperity of this great manufacture. The fine linens of *France* and *Holland*, though perhaps, not equal to those of *Ireland*, will find their way into the neighbouring countries, and supply a considerable part of the demand of the *European* market. Still, our linen fabrics, particularly the finer kinds, will possess the home market ; they will possess also the *British* market, for the demand of these markets cannot be supplied, from any

other quarter, with fabrics of the same quality, on terms equally advantageous. From our situation, favourable as it is, for an intercourse with *America* and the *West Indies*, we derive peculiar advantages, for supplying the demand of those countries, with our staple manufacture; and, in fact, a very considerable export of our linens to the new world, does at present subsist. All these markets, were we even to lose that of *Spain*; which has of late taken considerable quantities of our linens, as it is more than probable we shall do; are of themselves, sufficient to circulate the productions of our linen manufacture, were it even to be prosecuted to an extent, far exceeding the present amount. Such being the actual prosperity, and such the fair prospects of the linen manufacture; it will not be contended, that, there are any sound reasons, with respect to it, for departing from the demonstrable conclusions of political economy, which decidedly reprobate the measure of bounties. The linen manufacture has gained sufficient strength, to stand alone. It has attained a maturity, and need not now be fostered, and dandled, and fed at the public expence.

If the linen manufacture has now attained to a most flourishing state; the nation has, in some measure, purchased this blessing; I will not say, at a price adequate to its value; but, certainly, at a price very considerable. During a long period of time, large sums of public money have been granted, for the support and encouragement of the linen manufacture; certain duties* have been appropriated to its support; bounties are paid, on the importation of flax, and hemp, flax-feed, ashes, soap, and other materials, used in bleaching; and, lastly, a bounty is paid on the exportation of linens. The amount, on an average, of the appropriated duties, for a period ending in the year 1777, according to the disbursements made by the vice-treasurers of

Ireland,

* An excise duty of five per cent. on the amount of the customs, for the encouragement of the linen manufacture, on calicoes and linens—additional duty on tea, coffee, chocolate, &c. &c. on foreign cambricks, for the encouragement of the cambrick manufacture.

Ireland, to the trustees of the linen manufacture, for which they claimed credit, was about 14,500*l.* yearly. Bounty, on the import of flax seed, and bleaching materials, 1,500*l.* per annum. The amount of the parliamentary bounty, on the export of linens,* 4000*l.* yearly, making the total yearly amount of, from 33,000*l.* to 34,900*l.* The total of the sums applied to the encouragement of this manufacture, from the year 1700, to the year 1777, is stated to be 1,295,560*l.*

Ireland, having been in the linen trade, since the beginning of the present century, and having an encreasing demand, both for home consumption, and the foreign market; it must naturally be supposed, that the trade would encrease, in proportion to the demand. We are not, therefore, to attribute its present prosperity to the operation of bounties; it would have thrived, and grown, at any rate. The linen manufacture was the only channel, in which the industry of the people was suffered to flow; and there it would have flowed; though no linen-board or bounty had ever been thought of, or existed. It is contrary to all principles of commerce, to think, that such an encreasing manufacture would want flax, or flax seed, unless a bounty were paid, on the import. It may be made a question, whether the bounty on the importation of flax seed does not tend to injure the agriculture of the country, by preventing flax from being raised, for the purpose of saving the seed. It is idle to suppose, that a manufacture, which has employed a fourth part of the kingdom, for seventy years; and exports a million and half in sterling value, yearly, wants the support of boards, and bounties, and premiums. I speak, with respect to the manufacture of the north; but, in *Connaught*, and the *South*, the linen manufacture wants both regulation and encouragement. The fertility of soil seems to point out many parts of these provinces as the peculiar and favourite station of the linen manufacture. We must consider also, that, in these provinces are most of the chief harbours of the kingdom, and those, which are the most conveniently situated, for

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* The bounty is one penny per yard.

an intercourse with *America*, and the *West Indies*. Were the linen manufacture properly cultivated, in these provinces, where provisions and labour are very cheap, at present; the commodity might be produced on lower terms, and consequently sold, in the market, at a reduced price; by which means, the demand might be still further extended. An emporium or grand depot of linens might be established, in the west, or south; where the fabrics might be stored or collected, for the *American* mart; as they are, at present, in *Dublin* for the *British*.

Let it not be thought, that such speculations would engross too much of the capital of the country; the general extension and improvement of the linen manufacture, will not preclude the establishment of others, when the capital of the country shall be sufficient to embrace them. We are only considering, at present, which is the most eligible manner, of employing a confined capital. In truth, the prosperity of the linen manufacture, far from being an hindrance, to the extension of others, is, in some degree, connected with many. I have noticed its subserviency to that of paper; it is allied to the cotton and woollen manufactures; and co-operates with them, in many instances. Thus, linen-yarn is employed, as the warp of cottons; and employed in the texture of the coarser kinds of fustians, thicksets, and corderoys; it is combined with woollen yarn, in the composition of damascus and cheques.

There is a quantity of sail-cloth imported into *Ireland*, and yet it is a known fact, that the canvas of this country wears as well as any other, if not better. It seems to be a culpable inattention, indeed, a strange infatuation, on the part of government, in this country, to neglect the means of employing numbers of the people, and the sources of wealth and strength, which this branch of industry offers to us. It seems to be an unaccountable want of policy, on the part of *England*, that she does not endeavour to turn our thoughts, to this important object, supposing us blind and besotted, and wanting to ourselves;

selves; from our lethargy, to promote a vigorous pursuit of this most important branch of manufacture. There are many parts of *Ireland*, as I have observed, peculiarly adapted, for the production of hemp; and, were the manufactures of sail-cloth and cordage, properly encouraged in *Ireland*; vast sums of money would be retained in the *British* empire, which are now sent out of it, to *Russia* and the other northern countries; and extensive tracts of ground, which are, at present wholly unprofitable, and a disgrace and deformity to the country, would then become some of the most valuable and productive parts of the soil.

Sir *William Temple* observes, that there is hardly any country, lying on the sea-coast, which has so little shipping as *Ireland*, or is capable of employing more. This he imputes, partly to the want of merchants. He proposes to improve the trade of *Ireland*, by making two free ports, one, in some part of the county of *Kerry*, and one, on the north-west coast of *Ireland*; which might serve as magazines, for the *West India* trade.

How far such a measure might be adviseable it is not my design, to enquire in this place. But, I proceed to remark a want of policy, and foresight in *England*, which has hitherto neglected to form any maritime establishments, or naval arsenals, on any part of the shore, of this kingdom, nor has she encouraged the building of ships of war, in any of the ports of *Ireland*, notwithstanding the situation is so favourable, for receiving supplies of naval stores, from the northern countries; and so convenient for refitting ships, arriving from the *Atlantic* ocean; and the equipment of squadrons, for that destination. It may be said, in answer, that *Ireland* labours under a natural disadvantage, which renders all her harbours unfit for the purpose of docking large ships; namely, the want of a sufficient rise and fall of the tide, on the coast of *Ireland*. On the shores of this country, it is said, the tide does not rise and fall, more than twelve feet; whereas, on many of the *English* harbours, it rises and falls, no less, than twenty-two, or twenty-four

four feet. This is an inconvenience, which, no doubt, would render some expence and exertion of industry necessary, to prepare and establish docks, for careening men of war; but it does not, by any means, present insuperable difficulties. The want of sufficient rise and fall of the tide, to bear in a large ship, and afterwards leave her dry, might be remedied, by digging docks, to a sufficient depth; from whence the water might be discharged, by pumps, and the steam-engine.

The establishment at *Kinsale*, is wholly unworthy of notice, as to extent or utility, but, were establishments, on such an extended scale, as I mention, fixed for the building, and repairs of ships of war,—one in the south—another in the west, and a third, in the north of *Ireland*; great advantages would result, to the navy of *England*; and the industry of the people of this country would be invigorated, by new objects, and new incentives. The rich lands of the south would be rendered productive of the highest advantages, of which they are capable; the people would be employed, on new objects of husbandry, and in new branches of manufacture, at present neglected.

SECT. II.

Of the Woollen Manufacture.

If the plan of encouraging a manufacture, by bounties, can be prudent, or eligible in any case, it must be particularly so, with respect, to the woollen manufacture of *Ireland*. This is a manufacture, in which nature seems to have destined this country to excel, when she gave it pastures and climate, peculiarly adapted for the breed and nourishment of sheep.

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It is a manufacture, capable of turning to the best account, that portion of the soil of the country, which is least fit for tillage, and the sustenance of black cattle. It is a manufacture to which the opulence and greatness of *England* is chiefly to be ascribed;* and it is a manufacture, which formerly flourished, to an astonishing pitch of perfection, in this country. Even, at present, though by no means in the prosperous state, which a friend of this country might wish; it is in a sufficient degree of convalescence, to show, not only the possibility, but the probability of its regaining pristine vigour; and to convince us, that the care and attention, bestowed by the legislature, and the public, on this important object, will not be thrown away; should it become yet more an object of attention, than it is at present.

There are reasons, which do not apply to other manufactures, and which favour the adoption of bounties, with respect to that of woollen fabrics—the deliberate and continually operating injury of an hundred years duration cannot be repaired, in a short time, without extraordinary means and exertions. As trade, in this instance, was violently turned, out of one particular channel; it may be right, not to leave trade, as, in common cases, it ought to be left, to find its own level. Some extraordinary measures may be wisely pursued, to counteract the operation and effect of unnatural force; to free the channel, and to turn back the stream of industry.

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* It appears, from sundry considerations, laid before parliament in the year 1739, that 1,500,000 people were employed, at that time, in the *British* woollen manufacture; and, if these earn but sixpence per day, each for 313 working days in the year, it amounts to 11,737,500 *l.* which shews the great importance of the manufacture.

A pack of 240 weight of short wool, made into cloth, employs 63 persons to manufacture it;—3 men to sort, dry, mix, and make it ready, for the scribler, or stock-carder; five to stock-card it; 35 women and girls to spin it; and men to weave it; 4 men and boys, to spoole it, and read quills; 8 men and boys, to scour, burl, mill or full it; row, spear, and press it; without including the operations of the dyer.

It is calculated, that the importation of old and new drapery, annually drains *Ireland* of 500,000 *l.* and upwards.

We are particularly deficient, at present, in the finer branches of the woollen manufacture; and in the fabric of carpets. A great part of our consumption, in those articles, is supplied by importation. To produce the fabrics, I have mentioned, of good quality, on reasonable terms, there is a necessity for extensive work-shops and buildings, various, and expensive machinery, and, of course, a large capital. It might, therefore, be wise to continue some kind of public aid, to these branches of the manufacture, during a limited period of time. It would, perhaps, be worth the consideration of the legislature, whether it might not be both safe and expedient, to withdraw some part of the annual sums, which are now appropriated to the maintenance of the linen manufacture, (a manufacture able to maintain itself,) and transfer them, to the support of the woollen, which stands more in need of assistance.

There might be premiums appointed, with good effect, for improvements, in the breed and management of sheep, with a reference to the woollen manufacture; so as to encrease the length, the fineness, or strength of the staple, or filament. Experiments might be made, to ascertain how far it was practicable, to encrease all these properties at once, in the fleece of the same beast; or how far these qualities of wool interfered, with each other. It is known, that the wool is of unequal goodness, on different parts of the sheep; the farmer might be encouraged, to keep, those different parcels separate, so that the whole pack should consist only of the chosen parts of the best fleeces.—A mode of assorting wool, which, we are informed, is practiced in *Spain*. And, to encourage this attention to the fleece of sheep, and care in assorting the wool, premiums might be established for the first, the second, and third best packs of wool, which should be exposed for sale, at each of the wool fairs in this kingdom.

It would very much encourage the breed of sheep, and the production of wool, in parts of the country, where both have been hitherto neglected, were new fairs and markets for wool established, in the neighbourhood

bourhood of such districts, as abound in sheep-walks. It would be also a great advantage to the manufacturer, as he would then have the *primum* of his manufacture brought to his door, in such quantities, as would give him a free choice, at a fair price, instead of his being obliged, as is now the case, to resort to distant marts, and convey the raw material to his manufactory, at a heavy additional expence; or to practise the unfair mode of going about among the farmers, and forestalling the wool, which ought to come to open market. To encourage the sellers and buyers of wool, to frequent the newly established fairs or markets; I would propose, to grant a premium of so much per cent. on the amount of all wool; that should be sold in such fair, or market, during a period of five or seven years, from its first establishment, after which time, if the situation were judiciously chosen, it might be supposed, the market would subsist, of itself.

There is no part of the woollen manufacture, in which we are more deficient, than in the art of dying. There could not, therefore, be any service so effectually rendered to it, as by encouraging persons of chemical skill, to apply themselves, to the improvement of the art of dying. I have mentioned, in a former section, how solicitous the great *Colbert* was, on this head; and how much his cares have contributed to the subsequent perfection of the woollen manufacture in *France*.

Premiums should also be proposed, to stimulate the industry of naturalists, in searching for veins of pipe-clay and fuller's earth; or in their endeavouring to discover some cheap and effectual substitute for these that would equally answer the purpose of the scourer. There are many mineral productions, as alum, copperas, verdigrease, and several other substances, that are used in the process of dying, as colours in themselves, or as agents, in the fixing or transmutation of colours. There are useful vegetables, as woad and madder, which are generally employed by dyers, in the coarser and less delicate kinds of red and green.—As to all these substances, and many others, which might be enumerated, it is certain, that those of the mineral kingdom, might be ob-

tained, from the bowels of the earth, and those of the vegetable class, might be raised from its surface, in this country. Premiums, therefore, ought to be assigned to persons, who should raise, or prepare these commodities. It might also be expedient, to promote, by bounties, and parliamentary aid, the erection of fustic and logwood mills.

It is not improbable, that improvements might be made, in the combing and spinning of wool; particularly, as to the shortening of the operation, and the multiplying of the power of the human hand; as is done, with respect to the cotton wool. The industry and invention of the intelligent mechanist, should be turned, to consider the instruments, now used, in the preparation of the fleece for the loom; and should any improved machinery be the result; the manufacturer should be encouraged, by public aid, to procure and erect them, and the work-men should be trained, and encouraged by bounties, to render themselves perfect, in the use of them. Might not the filaments of woollen yarn, be rendered firm and wiry, by passing it through the rollers of *Arkwright's* machinery? (I propose this only as a question to those who are skilled in the woollen manufacture,) and might not yarn of wool, thus prepared, become a useful substitute for goat's or camel's hair, in the manufacture of camelots, mohairs, and fabrics of that kind. I mention these particulars, merely, as instances, to suggest what a multitude of useful experiments may be made, and what a number of important queries may arise, on the subject of improving the woollen manufacture.

It is rather difficult, it must be confessed, to conquer the prejudices, which people commonly entertain, for the old modes and instruments of carrying on manufactures; and to subdue the perverseness and obstinacy, that frequently indispose them, towards the adoption of new inventions. The pride, the ignorance, the indolence of the vulgar, all resist the progress of instruction. The workmen, in particular, are too apt, to rise in arms, for the destruction of any invention, that multi-
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plies the power of the human hand, and enables one person, to produce more finished manufactures than another.

It might be wise, to establish woollen halls, under the direction of proper inspectors, regulated and appointed by the legislature, at least, in those districts, that abound in sheep-walks. Such is nearly the whole of the province of *Connaught*, such the county of *Kerry*, and a considerable part of the county of *Tipperary*, in *Munster*; and such is the county of *Wicklow*. In the last mentioned county, a woollen-hall has been established, without resorting to parliament for aid, and proved, within the short period, which has intervened, since its erection, of the most important utility to the county. By establishments of this kind, for the sale of wool, and woollen fabrics, the work of inspection and regulation, would be facilitated, frauds and abuses would be prevented, or detected, the buyer and the seller would be inspired, with a mutual confidence, and the manufacture would attain to a degree of credit and celebrity, hitherto unknown, in this country. In addition to the erection of woollen-halls, it were, perhaps, to be wished, that the legislature, with the assistance of a committee of persons, well skilled in the woollen manufacture, would frame a table of regulations, in a manner somewhat analogous, to those they have already adopted, with respect to the linen manufacture, which should point out, and prohibit the frauds, and errors, that occur in the different stages and processes of the woollen manufacture; should prevent damaged and unsound wool from being exposed to sale, or employed in manufacture; should impose penalties on those, who might bring damaged wool, or unsaleable pieces of manufactured goods to market; should detect and punish frauds in the admeasurement of woollen fabrics; perhaps seal or stamp the several pieces, in testimony of their having undergone a scrutiny, and been found free from defect; with regard to quality and quantity. To do all this, without entrenching on that freedom which is the animating soul of industrious exertion in commerce, would be, I own, a task of some delicacy and difficulty; but what has been

done, by the *French* government, in the department of this very manufacture, and what has been done, with such success, in this country, to regulate and improve the linen manufacture, may convince us, that it is, by no means impracticable. Certainly, could the establishment of such a system of regulations, be accomplished; the woollen manufacture might acquire a credit, in the foreign market, equal to what the linen manufacture of the country, at present possesses.

The woollen manufacture of *England* did not attain its present state of perfection, without the joint operation, of encouragement and regulation. There are classes of wool, the use of which ought to be prohibited, in manufacture; the wool that falls off sheep, by malady, the wool, of sheep that die of disease;—matters of this kind deserve the interference of the legislature. The care of the sheep was vested, by the *Romans*, (as we are informed) in their censors, who condemned to penalties, those who neglected their flocks, and gave premiums, with the honourable title of *Ovinus*, to those who were careful of them.

The mountain breed of sheep ought to be encouraged, as their wool is of a remarkable fine staple. The importation of *Spanish* sheep should also be promoted, as was done in *England*, as means, of yet farther improving the wool of the country. It is to be lamented, that the gentlemen of this country, who apply themselves to breed sheep are, in general, more attentive to the size and shape of the animal, than to the quality of his fleece; and breed, rather for the butcher, than the manufacturer; though certainly the wool should be the prime object. It is also worth enquiry, what effect the change of soil, may have, either to render the fleece coarser, or finer. The wool of *Spain* would not maintain its present character of excellence, were it not for the extraordinary public attention, which is paid to the breeding and pasturage of flocks. The patriotic cares of *Don Pedro* the Fourth, in 1350, ameliorated the breed of the country, by bringing over sheep from *Barbary*; and the wise plans, which *Don Pedro* commenced, were attentively

tentively pursued, by the illustrious *Ximenes*, when he became prime minister.

With respect to the public encouragement, which may be given to the different branches of the woollen manufacture; I would recommend, that, in the present state of the country, and under the subsisting deficiency of capital, a preference should be given, to the cheaper and coarser fabrics. They require less skill, less elaborate machinery, for preparing them; the buyers of such fabrics are less fastidious, less subject to the caprice of fashion; the fabrics are, most of them, articles of prime utility; of course, there is little or no risk to the manufacturer, who speculates in them; add to this, that the raw materials are wholly the produce of the country; and that great part of the manufacture of these fabrics may be performed, by the wives and children of the farmers and peasants.

Among the manufactures, which, at present, are little cultivated, in this country, is that of carpets; which seems to be particularly entitled to encouragement, from the legislature of the country; as it may be composed entirely of native wool, and turns to a profitable account the very coarsest part of the fleece, and the coarsest kind of wool. But, as this manufacture requires looms of a complicated and expensive nature, for the more perfect species of it; and owes much of its excellence, to perfection, in the art of dying; the want of capital, and want of skill have hitherto impeded the advancement of this important branch of industry; it requires, particularly, public aid, to assist the manufacturer in erecting looms, for the production of carpets, like those of *Wilton* and *Axminster*; and to carry the principles of chemistry into the process of dying, by proper encouragements to men of science. To induce skilful workmen, from other countries, to settle and reside in *Ireland*, who might instruct the natives of the country, in this, and many other important manufactures; they should be favoured, with some particular immunities. It might be wise, to suspend, in their favour, the exclusive privileges and regulations of corporations and guilds;

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on the same principle, which has been partially adopted, with respect to the linen manufacture. *

In addition to all these measures, it might be prudent, to grant bounties on the export of such woollen fabricks, as are cheap in price, wholly composed of the wool of the country, most likely to be called for, in a foreign market, and least likely to excite the jealousy of the English manufacturers. Several branches of the woollen manufacture, afford an advantageous trade, with the United Netherlands, and some of the lighter, and cheaper kinds, could we afford them, on reduced prices, would find an extensive sale in America, and the West Indies.

Should it be thought expedient, to adopt these, and many other measures, which might be suggested, in favour of the woollen manufacture; it may be found necessary, to erect a board of trustees, for the woollen, similar to that of trustees for the linen manufacture; who may appoint proper inspectors, to enforce such regulations, as may be adopted, to detect frauds, and seal the woollen fabricks, if it should be found prudent to adopt such a precaution; may superintend the distribution of bounties, and premiums; may forward improvements in the various branches of this manufacture; and encourage industry, by giving or lending wheels, and looms, to proper persons. Some part of the sums now appropriated to the linen manufacture, might very safely be diverted to this purpose; and, in aid of this, the sinecure employment of alnager might be suppressed, and the salary applied to the same important object. But it is high time to conclude a subject, which has already betrayed me into considerable prolixity.

SECT. III.

* To shew how solicitous the English government was to induce skilful manufacturers to settle in the country; we find in Rymer's *Federa*, Vol. IV. p. 496, a letter of protection from Edward III. to John Kemp, coming over to exercise his trade in *England*, and to teach it; whereby, the King takes all his servants and chattles into his royal protection, and promises the same to all others of his occupation, and to all dyers and fullers who were disposed to settle in *England*.

SECT. III.

Of the Cotton Manufacture.

Many of the general observations, which I have adduced, under the head of the linen and woollen manufactures, will apply to that of cotton. I shall, therefore, be the more concise on this topic.

It is much to be wished, that some ingenious persons, capable of combining the philosophic theory, with the practical knowledge of different mechanical arts and trades, would publish plain and familiar memoirs, on the subject of manufactures, for the use of the intelligent and industrious artificer. The description of arts, and mechanical operations, made, with exactness and a knowledge of the subject, and stripped of all useless practices, with which ignorance, ever mysterious, overwhelms and embarrasses its proceedings, and reduced to the eternal principles of sound science, would be the most effectual means of bringing all arts to perfection; and of availing ourselves, to the utmost extent, of those goods, and advantages, which it is the will of the Supreme Being, that man should derive from his industry.—A detailed account of the various operations of the cotton manufacture, with accurate descriptions and drawings of the different machines employed in it, with sections of them, and separate delineations of their component parts; would, I am persuaded, be highly useful, as a measure preliminary, to the general establishment of this branch of industry.

As this country labours, at present, under a want of capital; and as the machinery and buildings requisite for the cotton manufacture, demand a very heavy preliminary expence; this manufacture may best
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be carried on, by the united efforts of trading or manufacturing companies; and requires to be supported, in its infancy. It might be wise, to assist the spirited manufacturer, by public aid, in the erection of improved machinery. This aid might consist, either in the actual grant of a certain sum of money, which might sometimes be necessary: or, what would be preferable, if the end could be attained by it, in the payment of so much per cent. for a limited term of years (suppose five or seven) on the prime cost of all machinery, which should be erected for the use of the cotton manufacture; provided, however, that such machinery should be really, and *bonà fide*, employed, in full work in the manufacture, during that time. The first cost of the machinery, and the regular and constant employment of it, to be ascertained on oath.

Is it not expedient, to protect the manufactures of cottons and calicoes, whether plain or printed, stamped or stained, by a duty, at least equivalent to what is laid, on the like manufactures of *Ireland*, when imported into *Britain*?—*Dr. Smith* allows, that there may be good policy, in such retaliations, when they lead to a repeal of the high duties or prohibitions complained of.

I have before explained, how the manufacturers in *England*, are enabled, by superior capital, and superior skill, to undersell our own manufacturers, even in the home market; and in particular, that, the proprietors of machinery are able to supply us with the article of cotton warp, (though subject to a duty of about two-pence per pound on importation) on cheaper terms, than it can be furnished from the cotton manufactories, and mills, of this country. So great, indeed, are the quantities, at present poured into this country, by *England*, that the proprietors of mills and machinery into this country, are apprehensive it may end in their ruin. The weavers of cotton, in this country, countenance these large importations, and conspire to oppose any diminution of them, with all their might, because they are thus furnished, with cotton yarn and warps, which are to them as the prima of the
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manufacture, at the cheapest rate.—Would it be wise in the legislature of this country, to interfere, and impose such a duty on cotton warps, as will secure to the manufactures of this country, at least, an equality in the home market?—The proprietors of machinery say, that this ought to be done. The weavers, on the contrary, loudly exclaim, that this would be a ruinous measure to the cotton manufacture; since the mills and machinery, now subsisting in *Ireland*, are wholly inadequate to supply the consumption of the country, with cotton yarn and warps. The solution of this question is not easy; either way it must be productive of considerable present inconvenience. I shall content myself with observing, that the erection of cotton mills and machinery, being an undertaking of such expence and hazard, as I have stated, and yet, the extension of such undertakings being so necessary to the prosperity of this manufacture, good policy seems to dictate, that persons should be allured, to embark their capital, in schemes of so much public utility and private risk, by a particular solicitude of the legislature, to protect and indemnify them, against losses.

With respect to the means of diffusing a knowledge of this manufacture, it might be proper, to erect, in every charter school, and orphan house, in the Foundling hospital, and other seminaries, where the children of the poor are brought up, one or more spinning jennies, in proportion to the extent of the foundation, with skilful inspectors, and masters who might instruct the children in the use of these machines, and employ them constantly, until their encrease of size and strength should call them away to other tasks, in the business of spinning cotton.

As a great part of the cotton manufacture, and indeed the production of the fabrics in most general use, both for garments and furniture, consists in, or is conversant about stamped, printed, and painted cottons, and calicoes, it is obvious, that a knowledge of the arts of copper-plate printing, and designing, and an intimate acquaintance with the qualities of dying materials, and the power and combinations, of

colours, and colorant substances, is peculiarly requisite in this manufacture; since much of the beauty and price of these fabricks consists in the elegance of patterns, and brilliancy of colours; and any error, in the quantity or quality of the dying or staining materials employed, may destroy the brightness or permanency of the colours; or, what is yet worse, impair and damage the texture of the fabrick itself.

SECT. IV.

Encouragement of the Paper Manufacture.

The manufacture of paper, at present, falls infinitely short, of supplying our own consumption. While the fabricks produced in the country, are insufficient for the supply of the home demand, I must certainly question the wisdom of imposing any tax, on the importation of this necessary article, however specious the pretext may be, of encouraging a domestic manufacture. Such an impost was, in fact, a tax on the literature of the country, and tended to enhance the price of all books; and only produced combinations among the workmen, employed in this branch of manufacture, to obtain a rise in their wages.

It must be confessed, that paper is one of those fabricks, which *Ireland* might expect to manufacture to the very best advantage. I have already stated what advantages, she possesses, both, with respect to the primum or substrate of the manufacture, and to the command of water, in addition to this, the home consumption of the kingdom would in itself, be sufficient, to give employment, to a very great capital, and a large number of people; and the manufacture is now well understood amongst us; nor does there seem to be any want of spirit
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in the master manufacturers. The chief obstacles, to the progress of this important branch of industry, seem to be, deficiency of capital, in the first instance, so that the master manufacturers are not able to extend their works, as they ought, or make experiments, and improvements: In the next place, the misconduct of the workmen must be noticed. I am sorry to say it, there is an unhappy spirit of insubordination among these poor people, which is equally injurious to their own private interests, and to the good of the community.

I cannot forbear observing, as a matter connected with this part of my subject, a circumstance peculiarly disgraceful to this country, and that shews an uncommon supineness and want, of liberal and enlightened views, and philosophic spirit, in the majority of those, who compose the legislature; as well as a total disregard of literature, in persons of all conditions; I mean, the neglect of providing any security whatsoever, for literary property in *Ireland*. This security was given, by statute in *England*, so long ago as the reign of *Queen Anne*; and the utility of this measure has been felt, and acknowledged for near a century. Why has not a similar regulation been adopted, in this country? Has it never been suggested, or occurred, to the thoughts of any one in either house of Parliament?—To the knowledge of the writer of these pages, applications on this subject have been made, in quarters, from whence such a measure would have proceeded, without danger of opposition; but, in vain.—*Humblings of higher nature vexed their brain.*

Is it, that *Ireland* is incapable, of feeling a regard for literature? Is it, that having long been considered, as the *Bæotia* of the modern world, she means to justify the appellation, to claim ignorance as her charter; and tacitly to acknowledge, that a security for literary prosperity in *Ireland*, would be an idle and nugatory regulation, inasmuch, as *Ireland* is incapable of producing any original work of merit, entitling its author to praise or profit.—*Can any good come out of Galilee?*

Can it be, that for any reasons of state concealed, but obvious, it should be the wish of certain persons, to discourage the genius of the country, to repress the advances of taste and literature, and the diffusion of knowledge, as being too intimately connected, with a spirit of free enquiry?—I will not think so meanly of the government. It must be observed, still more to the disgrace of *Ireland*, that a country, new in legislation, and yet more new in literature, has felt the propriety of securing literary property by law; and accordingly we find a statute, for that purpose, in the *American* code.

The want of this security exposes to a certain loss, from piracy, the author of any original work, who shall publish it, at his own expence; and the greater the merit of the work, the more certainly will the author be exposed to this injury and damage. Nor is it mere literature, or book-learned pursuits, as the vulgar would call them, that suffer, from this insecurity of copy-right. The comprehensive evil affails, geography—the fine arts—music—painting—engraving. It precludes all improvement in the typography of this country, with respect to correctness, or beauty of type. Should any printer, of taste and enterprise in his art, prepare an elegant and costly edition of any work, he is liable to have the sale of it ruined, by a spurious and disgraceful republication.

It must be confessed, that the legislature is not altogether culpable in this respect. I have been informed, that when some enlightened members of the Irish parliament, wished to bring forward a law, for the security of literary property, the printers and booksellers of Dublin, most foolishly raised an outcry against it, from an idle fear, that such a measure would interfere with what constitutes, at present, the chief part of the printing trade of *Ireland*,—cheap editions of *English* books; though a moment's consideration might have convinced any intelligent man, that a statute modelled on the *English* act of *Anne*, for the purpose of securing to the natives of *Ireland*, their literary property, could not interfere with the republication of foreign books.* As

* Since this Essay was written, the act of Union past; and the law for securing literary property in Ireland, was past in the Imperial Parliament.

As cheapness is chiefly consulted, in the *Irish* editions of books; it cannot be supposed, they should contribute much to the improvement or prosperity of the paper manufacture. In fact, the type and the paper of these publications are, in general, so execrable, and they are so miserably executed, in point of correctness, that they are a disgrace to the country; and thus it will be, while literary property remains unprotected.

The article of paper-hangings, in the present mode of fitting up houses, is become a very considerable part of the paper manufacture. As the excellence of this branch chiefly consists, in the elegance of pattern and brilliancy of colouring, the study of drawing and design, and the knowledge must contribute greatly to an excellence in this department; and in this respect, we are vastly inferior, as yet, to the manufacturers of *England*; and they, I believe, are inferior to the manufacturers of *France*. This being a matter, merely of taste and science, the country is inexcusable that acquiesces, for any length of time, under an inferiority which can only proceed from want of genius, or want of industry. At present there is a very large import of paper-hangings, as well as of all the other branches of the paper manufacture.

It is to be observed, as a consideration, which ought to stimulate the exertions of the *Irish* people, in this branch of industry, that it would afford them, were it extensively carried on, through all its subdenominations, the materials of a very profitable commerce, with *America* and the *West-Indies*; particularly in printed books, maps, prints, and engravings of all kinds, and paper-hangings. In particular, it is incredible with what avidity, the people of *America* call for cheap editions of printed books; and for all kinds of engravings, which I understand are much sought for by the people of *America*.

In the manufacture of paper, there may be a variation of process, according to the various destinations of the paper, for writing—printing—engraving—drawing—furniture, or hangings. This variation may, perhaps

haps consist, in the employing or omitting, the operation of putrefying the rags, or in the degree to which the fermentation may be carried; in the mallets or cylinders, for the purpose of reducing the material to pulp, before it is diluted, and made into paper. It is worth enquiry, whether, shortening the process, by any, or what means may, or may not, injure the texture; and what are the peculiar excellencies to be required, in the finished paper, according to its several destinations.

I have found it necessary, to dwell at some length on the paper manufacture; because its capabilities and importance are not fully understood. I cannot think that a nascent manufacture, hitherto so little encouraged, and so very susceptible of extension, with infinite profits to the country, would have appeared an eligible object of taxation, had there not existed somewhere, an extraordinary degree of clumsy inattention.

Under the pretence, of encouraging the manufacture of the country, a duty of two-pence per pound was laid on paper imported. Whatever might be the real motives of imposing this tax, it produced consequences far different from those, which were proposed as the ostensible motives, and injured even the native manufacture of paper, in an high degree. Strong representations on this subject were made, by the printers of *Dublin*, in a petition to parliament.—They stated, “ That
 “ the whole amount of paper made in *Ireland*, was insufficient for the
 “ consumption of the country;—that, if the tax should take place, the
 “ printing business, which then employed a considerable number of industrious persons, must be annihilated, at a blow;—that a very
 “ lucrative channel of business, and capable of great extension and
 “ improvement, had been opened,—the printing of cheap editions for
 “ the *American* market;—that when competition, in the market of
 “ paper, should be removed, a combination among the *Irish* makers
 “ of paper, in consequence of their monopoly, and an exorbitant increase, in the price of the commodity, would follow.”—But, “ wif-
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“dom crieth in the streets, and no man regardeth.” The legislature imposed a tax of two-pence per pound on the importation of paper, each quire of which might, on an average, weigh a pound, and be worth ten-pence. This was a duty of about twenty per cent. to the importer, and of course, produces a rise of near thirty per cent. in the price of the commodity to the consumer.

The allegations of the petitions were speedily verified, by melancholy experience. No sooner was the tax imposed, than violent combinations, for encrease of wages, took place among the workmen, employed in the paper manufacture. The printing business in *Ireland* was immediately extinguished; a lucrative and promising trade was annihilated, a meritorious and industrious set of manufacturers were thrown out of employment. Nor was the calamitous effect confined to mere printers; it extended to a variety of manufacturers, connected with the art of printing, either immediately or indirectly; as book-binders; leather-dressers; makers of pasteboard, glue and parchment; dealers in colours, thread and silk, and gold-beaters. A vast number of printers, with their families, would have been immediately forced to emigrate, from the country, if a temporary relief had not been offered to them, by an extensive undertaking in the department of printing, which was commenced in this country; I mean, a large impression of the parliamentary journals. This work, however, is near a close, and then the people who have hitherto been maintained by it, will be left wholly destitute.

Imported paper having been thus taxed, and the Irish manufacture of printed books, ruined, in consequence of the impost; it was seen, that the demand for Irish paper, instead of an increase, experienced a sensible diminution. The principal demand for paper is in the printing manufacture; but when the Irish printers, who had been traders, in common, with the printers of *England*, in certain branches of the trade, were wholly thrown out of employment, the Irish market for printing papers, ceased, almost entirely; and the Irish paper-makers, instead of their being gainers, lost the
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share which they had formerly, in supplying the calls of the printers; while the paper manufacturers of *Ireland* were struggling, under this measure, which the legislature professed to intend for their benefit; a new, and most severe stroke was inflicted, by an excise of two pence per pound, on paper made in this country, as if any thing were yet wanting to the ruin of the paper manufacture, and the printing business. The tax on imported paper, had been severely felt, and found highly injurious; yet, now, in order to maintain some consistency of principle, and to continue that preference which was affected to be given to the manufacture of *Ireland*, in the home market, it was necessary to lay an increased duty on imported paper; thus, the evils resulting from former duty on paper, were doubled with the tax. As to the tax, in whatever point of view it can be considered, it will not be productive. For, by the annihilation of the printing trade, and the operation of other causes, the demand for paper will be reduced, and the manufacture, will, in a great measure, be discontinued. A very few of the manufacturers, who possess large capitals, will continue to make paper, because they will be put in possession of a monopoly, from which they expect such exorbitant profit, as will more than countervail the tax; but all the minor manufacturers will be undone. Excise duties, with the course of visitation incident to them, are highly injurious to the manufactures, and oppressive to the manufacturer; inasmuch as they tend to a disclosure of certain valuable, and important secrets, on which much of the excellence of the manufacture, and the opulence of the manufacturer may depend. I apprehend, that in the paper manufacture, this last remark is applicable, with peculiar force. But, I fear, my anxiety for the extension of this most useful and important manufacture, has betrayed me into a prolixity tiresome to the reader.

I might enter into minute details, through the various branches of the manufactures, which I have mentioned; but I will rather, to pursue principles, than to prosecute details. A minute examination of the various, and ever varying productions of a manufacture, a tedious muster-roll of their names, a specification of their slight differences, and a particular description

of each process, that concurs to their fabrication, cannot convey solid information, to the mere artisan, and must prove unintelligible, or, at best, tiresome, to the reader, who is not a manufacturer, by profession. It was my wish, to impress certain obvious truths, of general utility, on the minds of those who possess influence in the country, and are likely to have a share in the regulation of arts and manufactures. Were judicious encouragement, on general principles, afforded to manufacturers, the manufacturers, themselves, would regulate the details, to the best advantage. Legislators of the land! encourage manufactures, judicious details will follow, of course. Details, in a theoretical essay, are merely of value, as they form a basis for general conclusions.

I have not attempted a full enumeration of manufactures; I did not find myself called to the task. Many others, doubtless, besides those which I have mentioned, may be cultivated, with success, in this country; but, I wish to point out those, which furnish the fairest hopes of thriving, and flourishing, and thus becoming sources of public and private opulence, and prosperity. Commercial invention, and national industry, may diverge, and ramify, into a thousand rills, and channels; but many of them, though they may employ a number of hands, and enrich some individuals, may not much encrease national prosperity. Others may be of too trifling a nature, to deserve notice; or may serve to draw off industry, from more important objects. Travellers into *Portugal*, assert, that a whole town, *Coimbra*, is occupied in the manufacture of tooth picks.—What think you, reader, of a section on the manufacture of tooth picks?—The Portuguese makes tooth picks for the Englishman, while the Englishman is making clothes for him.

I have not spoken of those manufactures, (if they deserve the name) which are wholly conversant about the preparation of provisions; though they are peculiarly adapted to the natural advantages of *Ireland*; because they do not properly come within the scope of the question proposed, by the Royal Irish Academy.

The manufactures within the contemplation of the Academy, were, as I conceive, those, where the patriotic care and attention of the community at

large, may hope to produce considerable effect from their exertions, where industry and skill have a large share, and the price of labour bears an high proportion to the prime cost of the materials; and, where a considerable division, and subdivision of tasks, obtains among the workmen. I would apply the term *manufacture*, when the object of industry is much changed, from its natural state, and first appearance, and derives its use and destinations, from the hand of the artist. Certainly, the popular, and common consent, seems to limit the meaning of the word, to this more confined acceptance; and, in this more narrowed, and vulgar sense, I chuse to employ it, rather, than in the wide, and technical extension to every department of manual industry, changing a commodity, however slightly.

It may well be questioned, whether it is not an abuse of terms, to apply the word, *manufacture*—synonymous to, *made by the hand of man*, to every object, on which human industry, is employed, in any degree, however rude, and inartificial. Where the thing appears, in almost the same original form, and is not deflected, by the hand of man, from its prime destination, but is only fitted to be used, or spent more commodiously, or transported with more ease, or retained for use a longer time. If these are to be called manufactures, such manufactures may be exercised, among people, very little removed from the savage state; very little advanced, indeed, in arts, and industry. Such are, the conversion of grain into flour, and meal—the preparation of salt and dried fish, of salted and dried flesh, of butter, and tallow.—Would it not be more accurate, to call the manual operation, which neither changes the form, nor destination of subject *preparation*, rather than *manufacture*?—It is an art, of a mixt nature, and appertains to husbandry full as much as to manufacture.

When the preparation of provisions is carried on extensively, as an object of commerce, and a source of national opulence, the exertions of industry are less employed in the actual preparation of the thing itself, than in the act of providing machines, apparatus, edifices, materials necessary for the commencement of the operation. In the preparation of bread corn, for the use of man;—the mechanist, the millwright, the builder of steam-engines,

gines, the stone cutter, the mason, the carpenter, the mariner who imports the stone, or the corn, the miner, who digs the coal, that warms the drying loft ;—all these persons must contribute their aid, before the art or occupation of the miller can be exercised. But it would be an abuse of terms to call these ancillary Persons, manufacturers of flour. The machinery being erected, little skill is requisite, few hands are employed about the commodity. The apparatus for the preparation of animal food, is less expensive, less ingenious, and less implicated.—Stages, and sheds, for salting, and curing ; smoke houses, for drying fish,—coopers yards, and warehouses, barrels, and salt.—For the trade in beef, pork, and butter.—a few hands may prepare a vast quantity of the commodity, to a great amount in value. This small number of persons, perform only simple operations. Little or no previous instructions are requisite ; few instruments, or utensils are necessary. One person may perform the operation, just as well as another, few productive hands being employed.

Trades, like these, do not contribute much to the encrease of population, or, to the extension of agriculture ; on the contrary, as far as they prevail, they tend, to draw the proprietor of land, from the cultivation of grain, to the grazing of cattle, to the discouragement of industry and population. Arts, like these, neither seem to require, nor do they deserve, the particular attention, and encouragement of the legislature. The demand of the home market ; and the speculations of the merchant exporter, will, of themselves, carry these branches of productive labour, to as great an extent, as is compatible with the public good. Where science, and the division of labour, have little or no place, legislative encouragement, can have little or no avail ; and, if it could, an object, which interferes with the population, the agriculture, the productive labour of the country, does not seem to deserve such an encouragement.

The arts, which properly demand the protection and encouragement of the legislation, are those, wherein the science, and ingenuity of man, may make visible progress ; may increase the productive power of individual labour ; may facilitate the fabrication of commodities, requisite for the convenience,

venience, the gratification, or the opulence of man ; may transform substances (many of them useless in themselves) into an infinite variety of forms, and apply them to an infinite variety of destinations ; and, from the wants, the luxuries, the caprices of the people, furnish employment to the industrious individual, and derive strength, and wealth to the community.

SECT. v.

On providing Food, for the Manufacturer.

There are certain points, of the utmost moment, connected with the prosperity of manufactures. The discussion of each of these would deserve a volume. I can merely glance at them, in a cursory manner, with the limited lights, which I possess, and the scanty limits to which I am confined. In the first place, it should be the great public care, to supply the manufacturer with abundance of food, on cheap terms.—It has been too much the practice of many theorists, in political economy, to consider manufactures and agriculture, as if they were wholly independent of each other, and separate in their interest, or even to institute a sort of rivalry between them and to draw comparisons of their respective merits, for the purpose of giving a preference to the one, or the other, according to the fancy of the speculator. This, surely, is a great, and injurious mistake. The interests of commerce and manufacture, can never be disjoined, from those of agriculture.

Another great object should be, to facilitate manufactures, and lessen their expence, by encreasing the stock of fuel in the country ; rendering the supply regular, and constant ; and diminishing the cost of an article, so indispensably necessary, both to the comfort of the individual, and the exercise, and existence of every branch of manufacture.

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A third point, which deserves the most attentive consideration of every man, who is a friend to the manufactures of this country, is to facilitate the means of communication, to diminish the expences, delay, uncertainty, and difficulty of transporting, from one part of the country to another, either in the course of supplying the home markets, or, in the progress to or from exportation, or importation, the manufactured fabrics, or commodities of the country, or the unwrought materials, which are necessary to be employed, in the production of such articles.

With respect to the sustenance of the manufacturer, it is self evident, that improvements in agriculture, and farming, by rendering the land more productive, and encreasing the supply of food, will render provisions cheap, and, by thus diminishing, to the manufacturer, the expences of living, will enable him to bring the article, which he fabricates, to the market, on cheaper terms. It appears, therefore, that improvements, in farming, and encouragement to the good, and skilful husbandman, will ultimately tend to the prosperity of manufactures. There seems to be little necessity, at present, for stimulating the public mind, to exertions in this department. The improvement of agriculture is now the great reigning object; and the pursuits of the farmer, in addition to their own intrinsic merit, and utility, have now all the cry of fashion, and force of example, in their favour. With the active encouragement of the gentry of the kingdom, we shall witness daily improvements in the quantity and quality of the produce of land, both animal, and vegetable. Philosophy and science will go hand in hand, with public spirit; and daily augment the productive powers of land, by holding out their lights, to direct industry in the several operations of agriculture, and farming—The selection, the breeding, and management of stock;—the knowledge of the diseases of cattle, and their cure—the improvement of eir strain—The nature of manures, and the ascertainment of what particular kind of manure is best adapted to each particular soil.—We know how much has been done, in the improvement of land by irrigation. Many simple, and cheap hydraulic machines might be contrived, which would greatly extend the benefits of this mode of cultivation

tivation. The ingenious mechanic will perpetually supply the farmer with new instruments, and utensils of agriculture, or improve the construction of those already in use. It will abridge the labours of the husbandman ; and, by enabling him to perform the same task, with a reduced number of men, and beasts, will render the process of agriculture cheaper, and thus contribute to lessen the price of provisions.

The methods I have mentioned, may serve, among others, to encrease the produce of a given portion of land. There are other methods, which might be advantageously employed to augment the quantity of productive land in the country. The first is, by colonizing the wastes, and mountains ; by which I mean, granting those unprofitable tracts, rent free, or subject only, to a small acknowledgment yearly, for a competent time, to industrious tenants. This should be connected with a barren land bill, exempting grounds, of this description, from the payment of all tithes, for a proportionable number of years. By such measures, great tracts of land, might, I am confident, be reclaimed, and rendered serviceable, to the public. The details of such an arrangement deserve to be considered attentively, and treated at length. It is sufficient for me to allude to them, in this place.

Another measure, something analogous, at least, proceeding in the same spirit, has been attended with the most beneficial effects, in *England*, both as to the encouragement of industry, and the encrease of the quantity of productive land, I mean, the division, and enclosure of common lands.—This has a beneficial operation, to reclaim both men, and lands, from an inert, and unproductive state.—The neighbourhoods of all commons, are usually seminaries of idlers, and freebooters. The verge of a common is colonized by a set of vagabonds, and refugees from the adjoining country. The enclosing each common becomes the means of breaking up a nest of lawless depredators, and petty pilferers. When the common comes to be enclosed, and divided ; it is then turned to account in the agriculture, and improved, to the best advantage.

These

These measures, which I have mentioned, would be the means of increasing the actual produce of land, in the country. It would then remain to apply such regulations, as might give the poor, and laborious population of the land, their full share, and benefit, in the blessings of heaven on the fertility of the soil, and the industry of the careful farmer.

There is one measure, which would effectually disappoint the speculations of the rapacious monopolists, and, at the same time, offer a reasonable encouragement to the farmer, and prevent his being disappointed of such a price for his grain, as would sufficiently reimburse his expences, and reward his labour, even in years of the greatest abundance, and depreciation in the price of corn. I mean the establishment of public granaries. Such a measure, if judiciously executed, with integrity, and economy, would guarantee the poor against ever suffering the extremes of famine;—a most important object in every well regulated state. The wisest nations, in all ages, have perceived the utility of establishments of this kind. It may be said, that the moisture of the climate, in *Ireland*, will render it difficult, to preserve corn for the requisite length of time. I am confident, that this obstacle might be obviated, by proper construction of the depots, and a judicious contrivance, and application of machinery, and apparatus.

I am far from being an enemy to distillers, in general; they furnish a great resource, and support to agriculture;—but, I could wish, that they were restricted, as was formerly the case, to the consumption of bere, and barley, which are not so properly the food of the poor. It is much to be regretted, that the legislature should have relaxed the salutary restraints on this subject, and tolerated the employment of oats, and even wheat and potatoes in distillation. Thus, a spirit of inferior quality is produced; and, a manufacture, which is now growing up into an article of consideration for export, is depreciated in its character; and what is much worse, and more to be lamented, the poor are deprived of a material part of their sustenance.

Notwithstanding

Notwithstanding all the speculations of *Adam Smith*, and his numerous tribe of followers, I should be very unwilling to give up the good old laws, and regulations, devised by our plain, and unphilosophical, but wise ancestors, against the mischiefs of monopoly, and the frauds, and exactions of forestallers, and regrators. Notwithstanding so much has been said, and written, on the subject, I am disposed to think, that the several laws, ancient, and modern, which direct, that the provisions shall be brought fairly to market, and sold there, bona fide, to the consumer; and fix certain rules, and standards, for ascertaining the assize of bread, on a fair average, are highly salutary, and ought to be regularly, and firmly, enforced by the magistrate: the arguments of *Doctor Smith*, on this head, prove too much;—his principles, if fairly followed up, would go to the total subversion of all regulation, and control; and end in compleat, and universal anarchy. I have already had occasion to remark, on the dangerous tendency of the Utopian principles of *Doctor Smith's* work;—in leading men to aim at absolute perfection; or, at least, a superiority to all objections, and inconveniences, in the institutions of imperfect, short-sighted creatures, like man—If all people were honest, benevolent, enlightened, and, in short, philosophers, like *Doctor Smith*; manufactures, markets, labour;—every thing might be left to find its own level. But, while fraud, and folly, continue to be such general principles of human action, in a depraved state, and a flight prospect, of temporary gain, too commonly renders the vulgar insensible, not only to their duty, but to their own true interests;—it will not prove a very safe experiment, wholly to discard regulation, and control.

SECT. VI.

RECAPITULATION.

Miscellaneous Observations, and Conclusion.

I have already enlarged so fully, on the importance of science, and particularly, of chymical science, in a variety of arts, and manufactures, indeed, I might say in all; that it would be an unnecessary waste of time, to trace over the same ground again. However, such is the culpable supineness of people in this country, and so predominant the inert force of passive ignorance, unconscious of the advantages, or the capabilities of improvement, that the importance of knowledge cannot be sufficiently re-echoed to the public ear.

The utility of chemical knowledge, in the arts, that operate on minerals, is obvious, to the most stupid observer. I have pointed out its great importance, in the linen, the woollen, the cotton, and paper manufactures, and the improvements that may be expected from it, in the operations of bleaching and dying. Signal services might be rendered by it, also, to the manufactures in leather; not only by providing a substitute for oak bark, and shortening the operation of tanning hides, for the common purposes of life; but, in preparing and colouring skins, so as to imitate, and in time supersede, *Spanish*, *Morocco*, and *Russian* leather. Might not chemistry furnish us, with a substitute for barilla ashes, which are now imported, at a considerable expence, to this country, and which might answer equally well all the ends, to which that substance is applicable. We find what advantages, the French have derived, from their knowledge of chymistry, in the manufacture of saltpetre, and in the discovery of a substi-

tute, to supply its place, in the composition of gunpowder. We find what an extensive commerce, is opened to them, by their knowledge of chymistry, in the exportation of essences, perfumes, and all the various productions of the alembic, or the furnace, for the use of manufacturers, for luxury, or for medicine. I must again observe, on the utility, of rendering the philosophic principles, of mechanical operations, familiar to the people, by details of the operations, in mechanical arts, and of the process and operation, in preparing any valuable or useful substance, whether as an ingredient, or auxiliary, in a manufacture, or as in itself an object of commerce.

The publication, which is called the *Repository of Arts and Manufactures*, and is chiefly compiled from the specifications of various patents, may be attended with very considerable advantages. It contains instructive details, and important discoveries, in various arts and manufactures; yet it fails of being as useful, as such a publication might be, from a want of method and scientific arrangement. It is a confused chaos of disjointed materials, given, without selection as to importance, or connection as to subject matter, from the specifications, as they happen to lie in the office. It furnishes, however, excellent materials for a regular methodized work, on the details of trades and manufactures. It were much to be wished, that in order to diffuse a rational knowledge of the principles of trade and manufactures, and particularly of the application of natural philosophy, in all its branches, especially in chymistry, to the manual arts, some intelligent persons were appointed, under the patronage of the Dublin Society, to explain these topics, in public lectures, adapted to the capacities of common manufacturers, expressed in plain and familiar terms, and illustrated by experiments.*

Such measures would contribute particularly to the extension, and improvement of the metallic manufactures, as well as of those
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* This has been executed, in some measure, since this Essay was written, in the Lectures of the ingenious Mr. *Higgon*.

of glass and potters ware. But the most effectual means of promoting, and encouraging, the production of all the last-mentioned fabrics; will be, by searching for veins of coal; and by the extension of the inland navigation, which may convey coals or turf, on moderate terms, to every part of the country.

The cheapness and abundance of fuel, in a country, which, though temperate, experiences a considerable degree of cold in the winter, and for no short time, is of the utmost importance, to the health and comfort of all persons; but it is particularly necessary, to the flourishing state of manufactures. I have already mentioned, in detail, a number of manufactures, and operations in manufactures, whereof it is a principal agent. In others, where it does not appear to act so directly, it is still necessary, either to preserve the material, to be wrought, or the instruments, whereby it is so wrought upon, in due tone and temper. Was it prudent, therefore, to lay a tax on this necessary of life, the want of which so severely presses the labouring poor, and interferes so materially, with the industry of the manufacturer, for the embellishment of the metropolis? It is fully ascertained, that this island produces inexhaustible stores of excellent coal; all that remains, is to facilitate their conveyance, from place to place. We never can avail ourselves of the natural and acquired advantages, which this island possesses, in their full extent, until this great object is accomplished, by the completion of canals, judiciously laid out, in various directions. We find what happy effects have been produced, by the multiplication of canals in *England*. The utility of such undertakings, is felt in *France*; and even *America* has begun to embark in them. Indeed, I do not know any object, on which the spirit of pecuniary speculation can be more profitably employed, or to which the assistance of public bounty, can be more judiciously directed, in any country, than the extension of an inland navigation.

Next in importance to food for the prosperity of the manufacturer, is an abundant supply of fuel. No doubt can remain, that vast quantities of coal, of an excellent quality, may be found in various parts of Ireland; it only wants the concurrence of the mineralogist and engineer, with the support and encouragement of government, to develop these hidden stores, and pour them forth for the benefit of the country. If an accurate mineralogical survey of the whole kingdom, were executed, and the advice of skilful engineers were obtained; mines of various useful substances might be discovered, levels might be taken, and estimates made of the practicability, and probable expence, of working these mines. I do not apprehend, that it can be supposed, that any partial considerations could weigh with government, in opposition to an amelioration of the state of *Ireland*, by a circumstance so important as the working of its native collieries. It is not to be supposed, that the parental care of government, would be more particularly extended to one part of this great empire, than to another. It must be a strange policy, indeed, which should think it adviseable to discourage the people of *Ireland*, from supplying themselves with fuel, the produce of their own soil, in order to give an undue preference to the *English* collieries; or to encourage the navigation of a few *English* towns, at the expence of the trade and manufactures of this whole kingdom. I am persuaded, that such suggestions are merely the reveries of gloomy and discontented people * Certain it is, however, that the scarcity of fuel, in many parts of the kingdom, reduces the poor to a most deplorable state of distress and misery.

To meet the evil arising from the scarcity of fuel, in many parts of the country, a mining company should be formed, to explore, with care, the subterraneous wealth of the country; and, in particular, to indicate where coals abound. The operations of science, under the directions of men of practical skill, should be seconded,
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* If any such narrow-minded prejudices ever existed, it is to be hoped, that all ground and pretext for them is done away, by the measure of a Legislative Union.

by the operations of wealth, in the forms of subscriptions and associations, to open and work the veins of coal; and also, by an extension of canals, which should facilitate the transport of fuel, which must be accomplished by subscriptions, and the formation of companies for the promotion of inland navigation, aided from time to time, by pecuniary encouragement from government.

To meet the destructive and disgraceful evil of combinations, should engage much of the care and attention of the legislature. For this purpose, it would be highly expedient to adopt the wise provisions introduced in favour of the linen manufacture, and to make them general. I would take away corporate privileges; I would attach severe penalties to the crime of illegal combination among manufacturers, and the disorders and outrages incident to it; and I would arm the magistrates with a summary power of inflicting them. There is no subject more connected with the welfare of this country, or which calls more loudly for the interference of the legislature, by the establishment of some more effectual and compendious remedy, than has hitherto existed. This must be effected, partly by regulating, in a more stern, compendious, and efficacious manner, the conduct of those who now actually do labour; and partly, by taking measures, to augment the numbers of those, who shall be willing to labour.*

The price of labour, we are told, should be left to find its own level. Be it so. Let the level then be preserved, from obstacle and interruption; let it not feel the hand of coercion and injudicious controul, from the impolitic and unseasonable interference of the government, and legislature; nor, on the other hand, let it be subject to the greater mischief of licentiousness, and lawless intimidation, which prevent the true price of labour from being known, preclude a fair competition in the mart of industry, and tend to establish a disgraceful and odious monopoly of employment, founded
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* This subject has been taken into consideration, by the Imperial Parliament, in the present Session,

in brutality, outrage, and riot, at the expence of sober moderation, legal order, and peaceable industry. The checks, at present, provided against illegal combinations, in this country, are insufficient. All the regulations, which have been established for this purpose, and found highly salutary, in *London*, ought to be adopted in this country. A cheap, and summary tribunal, accessible to all, applying an immediate remedy to the disease, and deterring men from aggression, and contempt of the laws, by the certainty of immediate punishment, is absolutely necessary to meet the growing evil of combinations. Very severe penalties, and particularly corporal punishment, ought to be enacted against the crime of illegal combination; and also against the offence, of wantonly deserting work once commenced; and the magistrates, or even a single magistrate, should be authorized to animadvert on such offences.

The system of excise is, no doubt, the most equitable, and most convenient mode of collecting the revenue, which it is necessary for the state to raise, from the wants of the consumption of individuals, for its own support; but, in some instances, the jealous avarice of the excise laws, guarding against frauds, with a superfluous care, and multiplying restraints and regulations, without end, defeats its own purpose; and finds, with surprise, in the annihilation of trade, and dereliction of manufactures, a decrease of that revenue, which it seeks to augment. Many of the details of the revenue code are hostile, in a supreme degree, to the existence of manufactures. The constant visitation, through every stage, that is thought requisite to the jealous, and vigilant spirit of excise collection; the registry of every vessel and utensil; the right of commanding an entrance, at all times, into the dwellings and workshops of manufacturers; all these, by compelling them to disclose the secrets of their trade, and subjecting them to the caprice, the insolence, and the rapacity of petty tyrants, too generally taken from the lowest classes of society, alike unprincipled and ignorant, discourage the manufacturers, in
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some important branches of industry; particularly the maltsters, and distillers of this country, and the manufacturers of tobacco, leather, and paper hangings.

There is no object, which ought to engage the attention of an enlightened legislature, more constantly, or to be cherished, with greater care, than the manufacture of malt, and the breweries, and distilleries, of this country; both as they contribute, in a great measure, to the support of government, by the large revenue which they yield; and as their prosperity, and increase, is inseparably connected, with the interests of agriculture; which, in every well-regulated country, ought to be the first national object, and the first legislative care. Agriculture is not only, in itself, the most profitable form of productive labour; but also, feeds and sustains every art, and every manufacture, in health and vigour. It is justly observed, by some writer, but by whom, I do not at present recollect, that, you may shear the sheep of agriculture, to the quick; they will bear it with all patience; while the swine of commerce, scream, and struggle, and make a hideous noise, if you attempt to touch but a bristle from their backs.

To assist us, in the discovery of veins of coal, as well as other useful minerals, to render us skilful, in the nature, properties, uses and applications of metals, and other mineral substances; to instruct us in the most perfect, and advantageous modes of working mines, and of smelting, assaying, and manufacturing metals, and minerals; for the various uses and purposes, to which they are applicable; it would be of the utmost utility, to send persons duly qualified by education, and talents, to travel into the countries, where these subjects are best understood, particularly in Germany, the great school of mineralogy, chemistry, and metallurgy, with directions to make themselves perfectly acquainted, with all the latest discoveries and improvements, in the arts of working mines, and smelting, assaying, and manufacturing metals; it would produce also important consequences,

quences, in the improvement of the metallic manufactures, were a judicious selection made from the German writers, on these subjects, and translated into English, at the public expence, for the use of mineralogists, minors, and artists in metals.

Would it not be wise and practicable to adopt a hint from the practice of *Spain*, and to avail ourselves of the improvements of every country, in every branch of manufacture, by selecting the most promising and intelligent artists, in each department of manufacture; causing them to be instructed in such foreign languages, as might be necessary for their destination, and sending them to travel, at the public expence, for the purpose of improving themselves, in their respective arts, and collecting all the knowledge and useful discoveries respecting them, that might be gleaned in foreign countries.

Farmers' Societies have been established, through most parts of *Great Britain*, and in some few parts of *Ireland*, with the happiest effect; it is something surprising, that the merchants and opulent manufacturers have not thought of establishing societies, on somewhat a similar plan, for the advancement of commerce, and manufacturers; it is surprising, that government has not thought of establishing a chamber of commerce, in a country, which possesses such commercial advantages; such institutions, directed by an enlightened patriotic spirit, and kept religiously clear, from a base and ruinous degeneracy, into monopoly and combination, must produce the happiest consequences, in the regulation, and improvement, of commerce and manufactures.

Intelligent manufacturers, under the direction of these societies, might be appointed to take circuits, for which purpose the kingdom should be divided into districts, they should visit the manufacturers, in their respective districts, and confer with them, on the state and progress of their manufactures, the capital they employed, the number of workmen they retained, the progress they used; the result of their examination should be carefully noted down, and communicated

cated to the society, by which they were sent, together with notices of the various improvements, of which the several manufactures were capable, and of the assistance of which they respectively stood in need.—In their conferences with the country manufacturers, these inspectors might occasionally communicate, in obvious and familiar terms, such modern improvements, in tools, and machinery, or in process, as might seem not to have yet reached them; and the most deserving and intelligent of the country manufacturers might, under the recommendation of these inspectors, be furnished with the more useful, and portable articles of machinery, and with patterns of new invented Fabricks and of such as were in the most general demand, for home consumption, and foreign markets; and instructed, to apply themselves, with a preference, to such as were in most general request.

It is much to be lamented, that we have, as yet, made little or no progress, in the useful project, of framing statistical tables, for *Ireland*, which was suggested by the royal *Irish Academy*, particularly as I have heard it suggested, that certain political considerations are likely to prove a permanent obstruction, to so useful a work; a detail of the natural productions, the quality of the soil, the amount of population, the state of agriculture, arts, and manufactures, with the improvements, and deficiencies, in their several branches, which were to be observed in each particular district, all these matters judiciously noted, and faithfully described, would serve, to direct the conduct of the manufacturer, the merchant, the legislator, in many operations, of great private and public importance.

To this I would add useful publications for the aid of the miner, the chemist, and the manufacturer; such as catalogues of minerals, catalogues, and descriptions, of the machines and instruments used in every manufacture, with brief and familiar explanations, of their properties and uses.—As to descriptions of machines and public works—dictionaries of arts and manufactures; the French nation has

furnished much excellent instruction, of this kind ; judicious extracts from the labours of their writers might be made, and translated, with good effect, for the use of our manufactures.

Philosophy and science, will contribute to the encrease and improvement of manufactures—by discovering and pointing out for use, new substances or such as were not known or supposed to be the produce of the country,—by indicating new, and more profitable applications of substances already known,—by suggesting profitable uses for substances now known, but neglected and unemployed.

Philosophy and science, will also contribute to improve the quality, the strength, the fineness, the beauty of fabricks, to abridge the labour of the manufacturer, in producing them, by various improvements in the construction and adaption of machinery, by calling into act, the different mechanic powers, as auxiliaries to mere human skill, industry, and manual strength.

In the production of new substances, agriculture, mineralogy, and chemistry, may combine their forces.—Agriculture will naturalize and raise useful plants, which may furnish new materials for new manufactures, or the preparation of which may, in itself, be a manufacture. I can glance only at these things, with the imperfect knowledge of agriculture which I possess. It is supposed, that among other valuable plants, which might be cultivated advantageously in this country, madder, liquorice, saffron, hops, hemp, and tobacco, offer a faint prospect of success. The want of capital, the oppressive and discouraging influence of tithes, and the apathy and indolence, too generally prevalent in Ireland, have hitherto proved bars to experiments of this kind. There are many known and common vegetable substances, which are now neglected, but might be applied to useful purposes—thus, as I have observed, a coarse texture, fit for making sacks, waggoners frocks, and other articles of that kind, may be manufactured from the fibres of nettles. There are many common vegetables, which are known to contain the astringent tanning principle,

ciple, and might prove useful substitutes, for oak bark, in the process of tanning-leather. There are many other plants, which would prove excellent ingredients for the preparation of dying stuffs.

Mineralogy might discover many useful substances, the perfect metals, coals, cobalt, fuller's earth, ochres, clays and sands for potteries, and the glass manufactures, all these by furnishing new objects and materials of manufacture, would afford new services of employment to an industrious population. Chemistry, also, by producing different substances for the purpose of the dyer, the painter, and other manufacturers and artists, will greatly enlarge the catalogue, and extend the sphere of industry.

Chemistry, will minister to manufacturers, not only by producing new substances, about which they may be conversant, but also by contributing to their beauty and perfection, by improvements in the preparation of various substances, employed in them, or in the process, of working up and employing those substances. It may suggest improved modes, of employing various matters, which are offered to the hand of art, by the mineral, the vegetable, and the animal kingdom; by communicating the result of various experiments, on their combinations, and decompositions. Thus many important philosophical facts, originally known only to the profound chemist, may be brought forward, for the instruction of painters, japanners, dyers, printers, manufacturers of glass, and hardware, hatters, clothiers, book-binders, shoe-makers, brewers, distillers, and a multitude of others. By this means, for instance, we may ascertain the best mode of preparing, and employing painters colours and dying materials. We may discover those ingredients, which, joined with other colours, and dyes, produce certain new derivative shades and colours, or improve the brilliancy of common colours, or bestow on them* a fixedness and body.

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Thus

* See Bancroft's Philosophy of Permanent Colours.

Thus would philosophy and science multiply the substances, about which manufactures are conversant,—improve and extend the modes of employing them, and bring the processes of manufacture to the highest perfection, of which they are capable, while, by the introduction of new inventions in machinery, and the skilful adoption of the mechanical powers, they will multiply, beyond all calculation, the productive efficacy of human labour.

After what I have already said, of the silk-manufacture, I trust, it will not appear an unpardonable negligence, if I have forborne to enlarge on the most effectual means of promoting and extending it in this country. There yet remains some other manufactures, and the detail of these;—but I feel I have exhausted myself. I am sure, I have exhausted the patience of the academy; it is time to close this most prolix disquisition. I am sensible of all its imperfections. It has been written by fits and starts, and bears all the marks of precipitation. Many things are jejune, many paradoxical; and some, it is to be feared, impracticable. Many important matters connected with this subject, are omitted; many things of subordinate value, are unnecessarily repeated. I am also conscious of the tautology, and other defects of style, into which I have been betrayed, by haste and inattention. It is not possible to be always vigilant, in a work of this length. I fear my readers have feelingly experienced the truth of this observation; yet, prolix as I have been, I feel, that I have not been as extended, as my subject required. To conclude, if, even the Deity was disposed to spare a guilty city, for the merits of a virtuous few, that might be found in it; a few honest truths, and useful observations, together with the spirit of sincerity, and good intention of the whole, may spread a veil over the many and great demerits, of this production.

INQUIRY